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ORIGINAL ARTICLES.

URIC ACID—ITS INFLUENCE IN GOUT.[1]

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A FEW days ago a gentleman came into my office complaining of indefinite pains and general discomfort. He brought with him a specimen of urine. He said that he had been told that he was full of uric acid, that his ills were due to it, and that he wanted me to examine the specimen and also to make an examination of his blood to see how much uric acid he had in it.

Day before yesterday, I received through the mail a magazine called the *Uric Acid Monthly*, the object of which was to set forth the value of various proprietary remedies for the cure of the "uric acid diathesis."

This morning a representative of one of the wholesale drug houses left on my desk a box of sample tablets, which he said were the latest and best uric acid solvent on the market, and which he claimed were a panacea for all ills.

It is this sort of thing that has led me to speak to you to-night upon a subject which is so old, and which has had so much said and written about it. My object is to go over in a brief manner the result of the work that has been done during the past decade upon the subject of uric acid to see what, if any, foundation in fact exists for the belief that uric acid is a cause of gout.

In 1776 Schiele first separated uric acid from the urine; and in 1797 Wollaston found biurate of soda in the deposits about gouty joints. In 1848, Garrod published a paper, in the *London Medico-Chirurgical Transactions*, in which he exploited uric acid as the cause of gout, a theory which was suggested to him by a work of Forbes, some years earlier, who had expounded the "lactic acid theory" of gout. As the causes of gout had long been the object of study, the advent of a new theory which was as reasonable as that of Garrod was accepted almost universally, and the work of physiologists upon the subject of uric acid was stimulated to great activity.

In 1886, Alexander Haig, of London, suffered from headache. He noticed that during these headaches his urine was loaded with excessive urates; he also remembered in this connection that invariably the headaches and the unusual condition of the urine followed the ingestion of large amounts of proteid food. Believing thoroughly in the theory of Garrod, this to Haig's mind was additional evidence of the truthfulness of the theory. Being a clever man and a voluminous writer, Haig did much toward establishing the present prevalent idea that uric acid is the universal cause of gout.

What is uric acid and what is its influence? Uric acid is a normal constituent of the urine. Great variability in the amount excreted exists among individuals, and also in the same individual under different conditions of diet, exercise and disease. The layman and, I regret to say, many physicians believe that uric acid circulates in the blood, as such. As a matter of fact it is always present in the form of urates, and is almost always excreted as a quadri-urate or amorphous urate. A very pretty theory, but one which is entirely hypothetical as to the form in which uric acid appears in the urine, is that of Roberts, given in the Croonian lectures.

The amount of urates or uric acid found in the urine is no index of the general amount of uric acid held in the blood; neither is the presence of uric acid crystals in any way indicative of an excess of uric acid. It simply means a peculiar condition of the urine which permits it to precipitate. The bi-urate occurs as such, only in gouty tophi or in deposits about the joints.

Since Garrod's time, and before, the origin of uric acid has been a matter of great speculation. Garrod, Latham and others believed that uric acid was derived from proteid matter, and was formed in the kidneys by the union of urea and some other substance, probably glycocin, and that it was thrown directly into the urine.

Another idea was that uric acid is the product of the imperfect oxidation of the acid into urea; that from some disturbance in the general metabolism the nitrogenous elements were held up at the uric acid stage instead of going on by further oxidation into urea.

The generally accepted idea to-day is that developed by Horbaczewski and his pupils. It is called the Nuclein theory. Horbaczewski believes that there is no relationship between urea and uric acid, the former being the terminal product of proteid metabolism, the latter being derived exclusively from the nuclein of the cell. The nucleo-proteid of the cell is broken up, the proteid part undergoing the usual proteolytic changes is converted into urea. The nuclein molecule is oxidized into nucleic acid. The nucleic acid, being further oxidized, forms on the one hand phosphoric acid and on the other the so-called "mother substance." The mother substance is oxidized into uric acid on the one hand and the purin xanthine or aloxur bases on the other.

In confirmation of this work of Horbaczewski are the observations of Williamson. He found that with the destruction of the white blood cells there was a fall in the leucocyte count with a corresponding increase in the output of uric

[1] Read before the Alumni of the City Hospital.

acid and phosphoric acid. The destruction of the white blood cells was confirmed by morphological examination of the blood preceding and during the fall. He further noted that sudden and marked variations in the white blood cell curve corresponded with similar variations in the uric acid and phosphoric acid curve.

Futcher made some observations which showed that in the urine of chronic gout the variation in the uric acid output in the interval and during an attack was accompanied by a similar variation in the phosphoric acid output. Our own observations in such cases of chronic gout correspond with those of Futcher. Another observation which we have made would seem also to be confirmatory evidence of the nuclein origin of uric acid. A number of patients suffering from chronic gout and nephritis were fed upon shad roe, a food rich in nuclein. Corresponding with the ingestion of this food there was an enormously increased output of uric acid which subsided on a return to the ordinary diet. Horbaczewski explains the excessive uric acid output with proteid feeding by the digestive leucocytosis, proving that the excess in uric acid is formed from the increased destruction of the leucocytes and not from the intake of proteid food. This is the generally accepted belief to-day.

Uric acid is present in the urine from two sources: the exogenous uric acid, or that derived with the body from foodstuffs, and the endogenous uric acid, that has its origin in the body cell.

It may exist in the blood from three causes: (1) Through increased production either of the exogenous or the endogenous form; (2) from deficient elimination; (3) from deficient oxidation. The increased production may be due either to disturbance of the general balance of metabolism or from foodstuffs rich in nuclein.

Deficient elimination is due to a loss of the excretory power of the kidney from disease of the organ.

Deficient oxidation may be due to disturbance in the functional activity of the liver, kidneys or other glandular organs, or from lack of muscular activity.

Crofton has demonstrated the power of the kidneys, liver and muscles to oxidize uric acid.

It is in relation to gout that most of the studies of uric acid have been made, and for convenience we will consider it only in connection with that disease.

The first question that naturally arises in considering the influence of uric acid as a cause of disease is, is it ever retained in the blood in excess? Abeles and a few others claim to have found uric acid in small quantities in the normal blood. These observations have not been confirmed by any of the more recent writers, and it is denied by Horbaczewski and many others. More recent methods fail to reveal it.

Magnus-Levy, Hiss, Von Jaksch found it in the blood of leucemia, chronic lead poisoning, chronic nephritis, chronic arthritis. It is deposited in the kidney and urinary passages as calculi under certain conditions, and in the joint structures and in the skin or gouty tophi in the form of bi-urate. To the first query the answer is yes.

The second question that naturally follows is: Is uric acid toxic when retained in the blood?

Freudweiler and Hiss injected urates about the joints and set up local necrosis. They claimed that the resultant process was too widespread to be accounted for by the mechanical action alone, and believed that it was partly toxic. This was followed by inflammation and subsequent development of fibrous tissue, a similar process to that which we have in the development of a gouty joint. These observations, however, have never been confirmed, and there are many reasons to doubt their accuracy.

As an evidence of the toxicity of uric acid and its relation as a causative factor in gout, Garrod claimed that gouty attacks were accompanied by a retention of uric acid. Our own observations made with modern methods have been exactly the reverse. We find, that is to say, that the low output of uric acid in the interval of chronic gout was invariably followed by an increased output of uric acid coincident with the accession of fever and pain of an acute exacerbation. Futcher has also made similar observations. Magnus-Levy and Hiss showed a light excretion preceding an attack, and a marked increase during the attack. Garrod claimed that there was an excess of uric acid in the blood during an attack, but modern methods have proven this view to be erroneous. He also said that the deposits of uric acid following an attack were due to increased alkalinity of the blood, which permitted of its precipitating out. The observations of Klemperer and Magnus-Levy have shown that there is no increased alkalinity of the blood.

If it were true that uric acid were toxic we would expect to find constantly in conditions where uric acid is known to be held in the body in excessive amounts symptoms which could be attributed to uric acid alone, but this is not the case. In leucemia, pneumonia, chronic nephritis and others in which it has been shown that there is an excess of uric acid, no specific symptoms referable to uric acid are ever seen. Again, in those cases to which I have already referred, in which nuclein holding food was fed in excess and in which the uric acid output was largely increased, there was never at any time during these experiments a disturbance of the system. In a number of cases in which we fed uric acid in large amounts there was never a disturbance of health, although a large part of the uric acid was recovered from the urine. Some of these cases were sufferers from chronic gout and others from chronic nephritis, and we should naturally expect if the uric acid were toxic, especially in the latter cases, to find an aggravation of the kidney disease. But such was not the case.

In carrying on some observations upon rabbits we infused directly into a vein large amounts of uric acid, a large percentage of which was recovered from the urine, but there was no evidence of a disturbance of the health of the animal. We may assume then, I think, that there is no evidence which has been confirmed to show that uric acid is in any way toxic.

In connection with its supposed influence in causing gout various observations have been made. One of the most fanciful perhaps was the mechanical theory of Roberts. Roberts believes that in gout there is a supersaturation of the blood, with the quadri-urates; that the deposits in the joint structure is due to the conversion of the quadri-urates into bi-urate by the excessive amount of sodium salt held in the lymph and synovial fluids. He further believes that the various nerve and other manifestations of gout are due to a crystallizing out of the blood stream into these various tissues of fine needles of uric acid, through which mechanical action alone produce various manifestations. In opposition to such a theory are the following facts: Under no circumstances have crystals of uric acid ever been found post mortem in the tissues. If it were true that the blood were supersaturated there is no reason why in cases of nephritis, for instance, where there is a marked retention of the chlorides and other sodium salts with the supersaturation of the blood with uric acid, there should not be a precipitation in the tissues under such circumstances, as the conditions are ideal for such precipitation. We know that such things never occur.

Again Klemperer has positively shown that the blood is never saturated with the urates, for the serum taken directly from the blood by means of blister is always capable of taking up large quantities of uric acid.

From the foregoing, we are forced to conclude that there is no evidence at all that uric acid causes gout or in fact any other disease; that those who have held so long to this theory have, as Herter has most aptly put it, "attributed to the ash the quality of the flame."

As I have before said, if the uric acid theory were true various conditions showing uric acid in excess would show arthritic changes.

If Koch's theories of specificity are necessary to determine the cause of any infectious disease, should we not by analogy demand that uric acid should comply with some such plan before we accept it as the cause of gout? One might ask what is the cause of gout? If we do not believe in uric acid, can we wantonly destroy this idol without adequately supplying its place? I must confess that we cannot with positiveness say what causes gout, but the most reasonable theory in the light of modern investigation is one of acid intoxication.

My time is too limited to go over this matter in any detail, but there are one or two thoughts I should like to suggest to you in this connection, which would bear out this theory. Gastro-intestinal disturbance, as you all know, is most common in gouty conditions, and while it is not invariable it is a fact that nearly always an acute exacerbation of gout is preceded by a disturbance of the stomach, and a so-called torpid liver. Then again, the uric acid output during an acute attack is very similar to that during an attack of infectious disease. With the acute exacerbation there is always an increased amount of urea secreted, and this, too, on a milk diet, showing conclusively a considerable waste of tissue. Following an acute attack there is always a diminished amount excreted, following the regeneration of the tissue. This idea is quite consistent with the condition of affairs about the joint, and taken in connection with our accepted nuclein theory as to the origin of uric acid will explain the phenomena which take place in the infection of the joint. Through this trauma a slight inflammatory reaction is set up in the joint structure. The toxic material at once begins its action upon this susceptible tissue. The leucocytes, in the effort to destroy the toxins in this process, come to the joint structures in great number; unable to cope successfully with the toxin, they are destroyed. The nuclein of the cell is oxidized into uric acid, and the result is the gouty joint.

Some observations of Rindfleisch, who has found giant-cells about the joint structures in gout which are capable of taking up uric acid, would seem to have some bearing upon this connection, and the work of Ebenstein which shows a previous necrosis of the tissues before the deposit takes place would coincide with this view.

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OBJECTIVE AND SUBJECTIVE SYMPTOMS OF SURGICAL DISEASES OF THE KIDNEY.[1]

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THERE is to-day a much better understanding of the value of the symptoms—subjective and objective—of kidney lesions, owing to the frequent opportunities to study them in *vivo* during the course of the numerous and satisfactory operations of the kidney, which have become now of daily occurrence.

Notwithstanding the value of increasingly exact laboratory aids and technical adjuvants to be described by others to-night, the main reliance in diagnosis must still rest on these objective and subjective symptoms, although their importance is often seemingly lessened by contrast with the information sometimes obtained with these other means.

The symptoms exhibited by the patient should be most carefully weighed and amplified by further investigation, not only of the main clues so elicited, but also of the routine possibilities of

[1] Read at the Annual Stated Meeting of the New York Academy of Medicine, G. U. Section, December 15, 1905. Symposium on Surgical Diseases of the Kidney.

any variety of renal lesion, also of the diseases of other organs as well, particularly of contiguous viscera.

The value of any symptom is relative to its accompanying factors. Familiarity with the particular form of disease and inherent good judgment will best equip the practitioner to decide what weight shall be given to the single equation.

A single symptom may become the central figure from which or toward which we must always work, *e.g.*, the violent typical pain of so-called renal colic. Generally speaking, we shall be on safer ground if we begin by collecting all our evidence dispassionately until we have a complete picture, or a collection of facts which may be further analyzed.

The chief symptoms of surgical diseases of the kidney are: (1) Pain—direct or indirect, or pain and tenderness; (2) variations from the normal on voiding urine and the appearance of the urine; (3) the presence of a tumor; (4) constitutional disturbances, such as fever and abnormal cardio-vascular action, and the constitutional condition peculiar to disease of the kidney, uremia. The chief physical signs are the direct, showing anomalies of position, size and shape of the kidney. In addition, we may recognize abnormal mobility or fixation, tenderness to pressure and to some extent the consistency of the kidney.

The indirect signs are those learned by a routine general physical examination, looking particularly for evidences of uremia, dry skin, foul breath, contracted pupil, cerebral disturbances and high tension pulse, and finally the signs of disease or anomaly in the remainder of the genito-urinary system.

The diagnostic significance of pain.—Direct pain is of the greatest value in calling attention to the kidney as the site of a lesion. It is also strongly presumptive of the existence of an acute inflammation. It may be constant and progressive as in malignant disease, it may be characteristically intermittent or variable as in disturbances due to a movable kidney. It is consistently absent in simple hydronephrosis and latent chronic inflammations.

Indirect pain, particularly along the course of the ureter, is of the greatest diagnostic value, and may alone be sufficient to establish the diagnosis of the passage of a stone. Intermittent pain and oliguria followed by polyuria, with a tumefaction of rapidly varying size is characteristic of the occasional kinking of the ureter of a freely movable kidney. Pain may be surprisingly absent. The pelvis and the kidney proper may be full of calculi, yet if acute suppuration is wanting and obstruction of the ureter does not occur, no pain will be felt.

Pain then is a useful positive symptom, but almost any pronounced lesion of the kidney may run a wholly painless course.

The appearance of the urine and disturbances of urination.—Polyuria, except the sudden form indicative of the relief of ureteral obstruction, has some significance in pointing to such conditions as tuberculosis and polycystic kidney in which an interstitial nephritis is regularly present. Diminution is important in indicating a destructive process.

Total anuria without mechanical causes usually means that the kidney's work is done without reference to the particular cause.

Sudden total anuria means either immediate simultaneous obstruction to both ureters or more usually the blocking of the ureter leading to the only sound kidney. Total temporary anuria often means mechanical blocking on one side and reflex suspension of secretion in the other kidney.

Therefore variations in the amount of urine secreted are important chiefly as an index of severity rather than of cause.

Pus in the urine.—The recognition that pus in macroscopic amounts comes from the kidney is proof that a lesion of the kidney exists and of a nature that will ordinarily be best dealt with by direct treatment. To prove that pus comes from the kidney, the absence of suppurative lesions of the rest of the genito-urinary apparatus must be shown.

If a cystitis exists, and can be demonstrated pretty conclusively to be antecedent, the lesion of the kidney is most probably a pyelonephritis and usually bilateral.

Pus from the kidney means for the most part one of two things, a pyelitis primary or secondary to nephrolithiasis or tuberculosis, the differentiation between certain stages of these two conditions also giving rise to the most confusion attending the differential diagnosis of kidney lesions.

Little pus is usually discharged from the kidney proper in ordinary surgical kidney.

Pus appearing in large quantities at variable intervals is more significant of pyonephrosis. Pyuria may point to a destructive malignant process—carcinoma, more rarely in sarcoma.

Blood in the urine has a significance similar to pus, and its origin in the kidney must also be similarly traced.

Renal hematuria as seen in practice is most frequently due to tuberculosis or calculus. In many instances of either condition, the symptom is entirely absent. It is quite regularly present in carcinoma, rarely in sarcoma, it is a symptom in about 25 per cent. of polycystic kidney. It may be due to syphilis, hemophilia, or excretion of irritants.

There is no certain way to distinguish the hematuria occurring in tuberculosis and calculus, the other factors must decide.

Small repeated hemorrhages occuring without previous pain or bodily exertion in a young person of delicate as opposed to the gouty type are more presumably due to tuberculosis, as also the severer exsanguinating hemorrhages.

Presence of a tumor.—The patient is rarely aware of the presence of a tumor unless of large size, such as rapidly growing sarcoma, or a large

polycystic kidney. Unusual mobility of the normal or abnormal kidney is generaly readily felt.

Constitutional disturbances.—Acute inflammatory lesions of the kidney regularly have symptoms of acute sepsis. Fever is marked, in the acute suppuration it is more continuous though it may have abrupt exacerbations. Chills are frequent but not characteristic. Irregular chills and fever of the pyemic type are more typical of the chronic pyelonephritis especially if there is an acute lighting up of the process.

Sudden lowering of the temperature to subnormal and remaining there, usually betokens uremia of a fatal type.

A regular evening rise of temperature, even if slight, is very suspicious of a tuberculous kidney.

Physical signs.—Given a very pronounced lesion, involving marked changes in size and shape of the kidney in a very thin person, the diagnosis can be made usually largely from the physical signs. Exactly the same condition may be overlooked or unrecognizable in a corpulent person with a resisting abdominal wall. Again a kidney may be palpated with ease and show nothing abnormal although extensively diseased.

With the exception of congenital anomalies, increased size is for the most part due to distention of the pelvis. Tumors and polycystic kidney are the notable exception, the kidney retaining its general shape, while distention of the pelvis gives a more globular surface. The larger kidneys will generally be sarcomata in children or hydronephrosis, simple or infected. Calculus of the kidney, unless complicated with suppuration or obstruction, generally causes no appreciable enlargement. Tuberculosis with inconsiderable infection of the pelvis produces little or even no enlargement. Tenderness of the kidney to the touch generally means suppuration of the acute type. Fixation of an enlarged kidney generally implies active suppuration, tuberculosis or malignant disease. An easily perceptible fluctuation generally means a simple hydronephrosis,—purulent collections seldom are so manifest. Irregularity of surface is fairly frequent in tuberculosis, it may be marked in malignant disease and polycystic kidney.

The following are in brief the chief diagnostic factors of the important surgical diseases of the kidney in their order of importance:

Anomalies.	*Physical Examination.*
Abnormal mobility	History. Recognition of displacement by examination. Associated neurasthenia and gastro-enteroptosis. Direct and indirect pain.
Tumors	*Age.*—Sarcoma in infancy, carcinoma in later life. Cachexia. Tumor. Pain. Hematuria.
Congenital polycystic kidney.	Large kidney shaped tumor; irregular surface,—sooner or later bilateral. Chronic diffuse nephritis. Pain and discomfort from dragging and pressure. Occasional hematuria.
Hydronephrosis, *Unilateral*	Antecedent history of blocking of one ureter, usually by a calculus. Large painless, rounded fluctuating tumor in the loin. Absence of constitutional and uremic symptoms. Compensatory hypertrophy of other kidney.
Hydronephrosis, *Double*	History usually of chronic obstruction to the escape of urine from the bladder, or of malignant growth pressing on both ureters. Recognition of the source of obstruction.
Pyonephrosis	Antecedent history of infection and obstruction. Large globular and fixed tumor in the flank. If process is *active,* febrile and other constitutional symptoms.
Pyelonephritis or surgical kidney	Usually history of long obstruction, *plus* infection,—mostly elderly men with obstructing prostate and men in middle life with stricture. Recognition of the obstruction and cystitis. A low grade chronic sepsis,—occasional acute exacerbations with chills and febrile disturbances. Chronic diffuse nephritis. Seldom any enlargement or tenderness of the kidney. Usually bilateral.
Tuberculosis	History of constitutional tuberculosis. Other tuberculous foci especially of the genito-urinary tract. Persistent evening rise of deep temperature. Very insidious and latent course of symptoms. Polyuria from chronic diffuse nephritis. Frequency of urination even in earlier stages before marked changes in bladder. Irregular hematuria without apparent cause. Pus thoroughly mixed with the urine which has an *acid* reaction.
Renal calculus	The passage per urethram of sand gravel, or small calculi. Typical renal colic. Attacks of hematuria,—especially if accompanying renal colic.

Renal calculus	Symptoms of suppuration in the kidney,—local pain and pyuria. Recognition of an enlarged kidney due to pyelitis or hydronephrosis. Excess of crystalline sediments. Temporary oliguria followed by polyuria. Gouty or rheumatic diathesis and chiefly in middle-aged individuals.

LABORATORY FINDINGS IN SURGICAL DISEASES OF THE KIDNEY.[1]

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IT is an undisputed fact that recent years have witnessed many advances in practical urine analysis; many long cherished ideas have been completely overthrown, importance has been found to attach to observations formerly noted but not considered significant, and many additional diagnostic and prognostic signs have been described.

As in everything else, *method* should exist in a urine analysis, and as our knowledge of the subject increases, this methodical routine procedure becomes correspondingly more complex and time consuming. The clinician with proper laboratory training in exact chemical technic is best fitted for the work, and the results of his efforts are not only scientific from the laboratory point of view but practical from the clinical standpoint as well. Practice in this ideal way is impossible in most instances for two reasons: (1) The clinician has not the time at his disposal, and (2) the laboratory expert who must be ready to do the simplest or most intricate task at a moment's notice, requires such an array of delicate apparatus in perfect adjustment, and carefully standardized reagents, which he cannot afford to maintain unless this character of work occupies his entire time. When the relationship between the clinician and the laboratory expert is like the ideal association of the physician and surgeon, then diagnosis, and in many instances prognosis, are as scientific as they can be made to-day.

Before considering the typical and atypical pictures presented by the urine in the different surgical diseases of the kidney, I beg your attention for a few minutes to some of the more important generalities. It is both undesirable and impossible to mention here all the phases of this work, and as it is, I am afraid of being accused of the commonplace.

Concerning the quantity of urine, 24-hour specimens teach many significant points not learned in any other way. In considering the significance of a polyuria, that due to neurosis, diuretics, ordered intake of much fluid, a previously removed kidney or an occlusion of one ureter should not be forgotten. In oliguria or anuria, that due to unilateral painful lesions in or about the kidney, reflex and without obstruction, must be kept in mind.

Concerning the chemical analysis of urine, it is here that routine work is so essential. Owing to the omission of a test for glucose because the specific gravity created no suspicion in this direction, a post-operative diabetic coma has often come as a surprise. The usual tests for glucose are made much more sensitive by keeping the tubes on a water bath in preference to simply boiling.

Pentosuria is by no means the uncommon condition formerly believed, and its occurrence in presumably healthy persons is not at all rare. Many a case of pentosuria is called glycosuria because a differential test is not made.

In testing for albumin, the methods selected should be such that nucleoalbumin, albumose and Bence-Jones albumin are not overlooked or confused. It is needless for me to add that albuminuria does not necessarily indicate a nephritis or that a nephritis must present even traces of albumin at all times. Concentrated urines show faint traces of albumin much more clearly if they are diluted with water before testing.

Concerning the daily excretion of urea, the belief has long been abandoned that an output of 6 or 8 grams means an impending uremia, or one of 40 grams necessarily healthy kidneys. On the other hand, Cabot's statement that a knowledge of the daily excretion of urea is not of the slightest use, is the other extreme. The usual text-book statement that the daily excretion of urea is normally from 25 to 40 grams is an heirloom. From 16 to 28 grams are much better figures, in this city at least, and Koranyi has stated that in his opinion 16 grams is the normal minimum for a well-built male.

The relative and absolute excretion of chlorides has had renewed attention of late; in this connection the method by incineration must be advocated and the direct method condemned.

Concerning the microscopical examination of urine, the great value of the centrifuge, aside from its time-saving advantage, is established. The absurd statements that renal elements are destroyed by its proper use, or structures formed that simulate casts, have been disproven. The microspectroscope will demonstrate the proper bands from one red blood cell.

Concerning the presence of casts it is needless to add that a granular cast does not necessarily indicate a chronic nephritis, or that a nephritis demands the constant presence of casts. Structures derived from the prostate simulate casts and particularly so-called cylindroids, but with care the differentiation is not difficult.

An erroneous laboratory diagnosis of an inflammatory or malignant lesion based solely on the structure of one or a number of epithelial cells, has annoyed almost every clinician. While it is far from me to deny the value of the in-

[1] Read at the Annual Meeting of the New York Academy of Medicine, G. U. Section, December 15, 1904. Symposium on Surgical Diseases of the Kidney.

formation gained by a close observation of the epithelial cells in the urine, modern writings justly show less attention to this particular feature. Text-books are very vague on the subject and usually present plates copied and recopied from the older authors. Tumor particles are sometimes found in the urine and justify a conclusion, but a diagnosis of carcinoma or sarcoma of the kidney based on the presence of a "cancer cell" or a "sarcoma cell" is simply absurd, although it is done daily.

Concerning methods for determining the functional ability of the kidneys, much of what has been advocated has proven decidedly useful, though like most other things not infallible. Molecular concentration determined by cryoscopy of the blood is perhaps the best procedure; it is an important factor in the prognosis when a diseased kidney must be removed, it lends much weight in deciding if a kidney is to be removed or not, and it is of value in determining the functional ability in bilateral kidney disease. Cryoscopy of the urine applied to any given specimen or to a 24-hour specimen teaches little or nothing. G. Fuchs[1] and others claim better results by multiplying the freezing point by a factor learned from the gravity and the daily quantity of urine. On the other hand, cryoscopy applied to specimens of urine collected from each kidney separately, is perhaps as good a guide to the relative functional ability as we have. Previous intake of large amounts of fluid is not advisable if this test is to be used.

The electric conductivity of the urine teaches nothing in addition to cryoscopy, and the results are for practical purposes identical. The phloridzin, methylene blue, indigo carmine and similar tests have never gained the popularity in this city that they have enjoyed abroad. Their value seems to decrease from year to year and their use does not seem without risk.

Determining the functional ability by means of the toxic quality of the urine has been advocated by Bouchard. He figures a urotoxic coefficient, but I have no experience as to the value of the method.

To return to the subject at hand. The following brief conclusions are based chiefly on personal laboratory experience, the exact data of which I cannot present in the limited time at my disposal. In acute catarrh of the renal pelvis, the urinary picture is somewhat different if the lesion is due to a local cause or to an ascending infection. In the event of a local cause, calculus or pronounced crystalline deposit, the daily amount of urine is decreased, there is corresponding concentration, normal output of solids, blood cells according to local irritation, few leucocytes, some mucus, characteristic groups of epithelial cells, and an amount of albumin and casts according to the degree of hyperemia of the parenchyma which invariably accompanies the condition. In the event of an ascending infection, pyogenic, gonorrheal or colon bacillus, the urine, showing the evidences of the bladder lesion, suddenly becomes scanty, with some increase in the albumin and the presence of few casts, and, if one is fortunate enough to recognize them, epithelial cells referable to the pelvis, but with a normal daily output of solids. In either class this condition does not last long; the evidences of the acute catarrh disappear or the picture soon becomes that of a pyelitis.

In pyelitis with hyperemia of the parenchyma, the daily amount of urine is increased, the gravity lowered and the daily excretion of solids is normal. The microscopic picture shows pus in addition to the elements found with catarrh of the pelvis. In pyelonephritis the urine presents the same features as in pyelitis with the addition of the elements referable to the parenchyma, *i.e.*, albumin and casts. In the event of a compensating excretory action of the other kidney which usually exists, the daily excretion of solids remains normal or nearly so. Purulent exudates from the kidney do not form a coagulum nearly as frequently as those from the bladder, and are always much poorer in epithelial cells.

Renal hematuria, unless the bleeding is very profuse, also lacks the tendency to coagulation, and much of the hemoglobin is dissolved in the urine, while in vesical hemorrhage most of the coloring matter is in the sediment of corpuscles which are usually in clots.

In hydronephrosis and pyonephrosis with occlusion of the ureter, the urine passed may be perfectly normal but usually shows a little polyuria and evidences of slight hyperemia of the parenchyma doubtless due to the additional excretory labor of the acting kidney. An emptying hydronephrosis, especially if there is an accompanying hematuria, by no means rare, presents a very confusing urinary picture often of little value in diagnosis.

The microscopic picture of the urine obtained when a pyonephrosis is discharging into the bladder may also be quite meager, but a corroborative diagnosis can frequently be made by the necrotic character of the pus.

Aspirated fluid from a hydronephrosis or pyonephrosis is very easily identified and needs no further comment.

In cysts of the kidney, in the syphilitic hyperplasia simulating malignant tumors as well as in the cystic degeneration of the kidney, urine analysis presents little or nothing of value in the specific diagnosis.

In renal actinomycosis the urinary picture is that of a pyelitis with hyperemia of the parenchyma or of a pyelonephritis, with more or less frequent hematuria of renal origin. The fungus is usually rather difficult to identify positively.

In floating kidney the urine discloses no characteristic features, but in these cases transient neurotic polyuria is very frequently observed.

In malignant tumors of the kidney, intermit-

1. Zeitsch. f. angew. Chem., 1902.

tent hematuria often of very short duration is the most frequent abnormal feature in the urine. This hematuria is usually quite profuse and in consequence frequently presents clots and even casts of the ureter or pelvis. In typical cases the urine is otherwise normal or perhaps more frequently shows the evidences of a slight hyperemia of the renal parenchyma. The presence of microscopic blood between the attacks of pronounced hematuria is a very suggestive feature. Even if the hemorrhage is quite slow the blood looks red and is very seldom smoky as in acute nephritis. The coexistence of a pyelitis or pyelonephritis is really foreign to the condition under consideration, and when present is brought about by an ascending infection perhaps due to lack of resistance on the part of the mucous membrane, or it is the result of a local suppurating lesion in the tumor. A few cases present a marked albuminuria without corroborative evidence of a corresponding lesion of the remaining healthy parenchyma. As a matter of fact, the urine analysis in malignant renal tumors teaches less of diagnostic value than is usually held. When sufficiently preserved shreds of tumor are passed the conclusions are obvious, but this occurrence is by no means as frequent as generally believed, in which particular considerable experience makes me agree with Israel. I have already expressed my opinion as to the value of a diagnosis based on single "cancer cells" or "sarcoma cells" which seems to be Israel's conclusion as well.

In renal tuberculosis the picture at first is that of a pyelitis with a hyperemia of the parenchyma, an almost invariable presence of at least a few blood cells and a distinct polyuria; and later there are the evidences of a pyelonephritis.

Finding the tubercle bacilli in the sediment has been much improved by the introduction of the centrifuge, and success is largely due to the patient and painstaking search made for them. The cases of renal tuberculosis in which bacilli are not found when a number of specimens have been examined are not as numerous as many will have you believe, and the fault usually lies in the examination of but one specimen. There are cases, however, in which bacilli cannot be found on repeated search, and in these animal inoculation is often, though by no means invariably successful. Tuberculous urine as a rule does not show a macroscopic bacteriuria, and usually has an acid reaction. When, however, a mixed infection occurs and the specimen is foul, an attempt should be made to get it into a sweeter condition before animal inoculation is attempted. In the event of animal inoculation, one should not be satisfied with the macroscopic result, but the presence of tubercles microscopically must be demonstrated. I recall one case where the animals died at the proper time and presented the gross appearance of a tuberculosis, but the microscopical examination revealed no tuberculous lesion.

A word concerning the differentiation between tubercle bacilli and smegma bacilli. In the usual specimens there is no difficulty in the use of the standard methods, but where there is a marked alkaline fermentation, tubercle bacilli do not withstand the action of alcohol as well. An opinion based on the presence of single bacillus must remain guarded, but where the organisms occur in groups, fortunately the case in the majority of instances, these present evidences clearly characteristic of either tubercle or smegma, which specific grouping has been emphasized in the older writings, but is often overlooked in articles on the subject to-day. The diagnosis of tuberculous renal disease can usually be made from the urine, and success is due rather to patient investigation than to particular skill. Statements to the contrary usually originate from the fact that the search for bacilli has been confined to one or two specimens.

In cases of renal calculus the urinary picture is most varied. On the one hand, perfectly normal urine may be voided or there may be the evidences of a slight hyperemia of the parenchyma, and on the other the most severe pyelonephritis and cystitis with a marked alkaline fermentation may be seen, in which it is often difficult to find any structural elements in the vast amount of very offensive coagulated pus.

At the time of a renal colic, the picture ordinarily is that of an acute catarrh of the pelvis, with more or less hyperemia of the parenchyma, the amount of blood being in direct proportion to the mechanical injury. After the attack of pain these evidences disappear more or less quickly, or a pyelitis is developed, to remain or gradually clear up, as the case may be. In the chemical analysis of specimens from cases of renal stone, I was impressed years ago by an almost constant high relative, as well as absolute nitrogenous output, and have gradually come to look upon these features as an important point in differential diagnosis with almost constant success. It stands to reason that a patient whose mode of life has been suitably corrected does not present these characteristics or only to a moderate degree. The presence of pronounced crystalline deposits, while forming a link in the chain of evidence, justifies absolute conclusions in only a small number of cases. Triple phosphate deposits are the result of an alkaline fermentation due to any cause and merit no consideration in this connection.

Intermittent hydronephrosis often empties with a colic, tenesmus and frequent micturition, and at this time is apt to show some blood. The differential point between it and a stone colic is, that in the former the amount of urine is usually large and the gravity low, whereas in the latter the opposite is an almost invariable rule.

In nephralgia and allied conditions, the etiology of which seems but little understood, the urinary findings may so closely resemble those of other diseases, that a differential diagnosis is

usually difficult and at times impossible. The absolutely pessimistic view held by many is often due to the negative outcome of one or two specimens, while the clinical examination is repeated over and over, with no better result. Careful and often repeated analysis, while possibly leading to no positive result, tends to exclude other conditions, and is oftentimes of greater practical utility than the clinical work. During a nephralgia the urine may be perfectly normal, but this is also true in renal colic due to stone, though much less frequently. A neurotic polyuria may occur at the time of a neuralgic pain, whereas no simulating condition is observed in stone colic. On the other hand, cases of neuralgia with hematuria and scanty urine are not unknown, but in my observations they never show the almost immediate evidences of inflammatory lesions noted in the same conditions due to calculus. The pronounced hematuria at times seen with contracting kidney and quite different from the bleeding of an acute nephritis, or an acute exacerbation more properly, must be kept in mind when seeking a cause for a renal hematuria.

In subcutaneous renal injuries the first urine shows a pure hematuria and the subsequent picture depends largely on the nature and result of the injury and on the presence or absence of a bacterial infection.

Time does not permit me to continue this review, but before closing my remarks I beg your attention to a few additional points. In contemplated kidney surgery in diabetes the surgeon should be influenced more by the evidences of intoxication than by the percentage of glucose.

Postanesthetic nephritis is to-day a much less frequent condition than it was fifteen years ago, an improvement which can doubtless be ascribed to the more careful use of anesthetics, quicker operating, the free administration of water by mouth or rectum after operation and proper early attention to the bowels.

A routine blood examination teaches much in forming an opinion as to the necessity and urgency of operation in septic kidney lesions. Here, as in other septic processes, many observers have attempted to fix the degree of leucocytosis at which an inflammatory lesion without exudate may be suspected, and that at which a suspicion of the presence of a purulent exudate is justified. Leucocytosis is, however, largely dependent on body resistance toward infection; thus good resistance will occasion pronounced leucocytosis in slight infections, and poor resistance little or no leucocytosis in grave infections. As there is no method of determining this body resistance with sufficient accuracy, the inferences drawn from a leucocytosis of given degree must remain questionable, except perhaps in unusually excessive counts.

For some years I have been impressed by the fact that the differential count of leucocytes offers a far better guide to the status of the inflammatory process, one which is not influenced to a perceptible degree by body resistance, and furthermore, that the leucocytosis with a given differential count may be an indicator of this body resistance, but unfortunately I cannot here enter into the details of this subject.

I will close with a new motto on an old subject: "The man who makes every diagnosis in the laboratory is as short-sighted and liable to grave error as the man who ignores microscope and test tube."

THE X-RAY IN KIDNEY DISEASE.[1]

BY LEWIS GREGORY COLE, M.D.,
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LAST spring it was my privilege to read a paper on X-ray before the G. U. section, and I greatly appreciate having an opportunity to supplement it at this time.

Until recently X-ray was used only as a possible aid in diagnosing renal and ureteral calculi. If it confirmed the diagnosis, well and good; if not, the operation was performed just the same.

Within the last year or so there have been improvements in the apparatus and technic which enable us to make skiagraphs of moderate-sized subjects, by which the diagnosis may be made regardless of signs or symptoms. By diagnosis, I mean the negative as well as positive diagnoses of calculi.

In order to do this, however, we must have what I demonstrated here last spring, viz., the ray of selective absorption. At that time I thought it was an easy thing to get but it is not. Since then, I have spent many hours of hard work getting, losing and getting it again, each time, however, learning facts about it which shortly I am going to publish. This ray is absolutely essential for the negative diagnosis of renal and ureteral calculi.

It is perfectly possible to show some renal calculi in skiagraphs made without this ray, but such plates are worthless in making negative diagnoses.

Last spring I spoke also of the necessity of short exposures on account of the motion of the kidney during respiration and because of the danger of burning the patient. There is still another danger, not to the patient but to the plate, viz., fogging the plate by the rays that go *around* the patient instead of *through* him. At the time I mentioned the remarkably short exposures of seven and fourteen seconds for a patient weighing 100 lbs. Since then, for all patients weighing 150 lbs. or less, my rule has been from five to fifteen or perhaps twenty seconds in making an exposure.

With the improvements in the apparatus and technic and with the ray of selective absorption,

[1] Read at the Annual Meeting of the New York Academy of Medicine, G. U. Section, December 15, 1904. Symposium on Surgical Diseases of the Kidney.

we are able to show finer gradation of shadows and greater contrast between the different soft tissues. As these shadows increase the difficulty of reading or interpreting the plate increase. For instance, in an X-ray plate there is not only bone, muscle and calculi to be seen; but perhaps also feces, undigested food in the intestine, calcareous nodules or arteries, or tuberculous deposits in the kidney. Carcinoma of the lower end of the esophagus shows distinctly and I have every reason to believe it would show in an affected kidney.

You will readily see that any or all of these shadows might be misinterpreted as renal or ureteral calculi. In order to make a diagnosis of calculi you must be able to make out the size and shape of the calculi.

Near the lower end of the ureter there are shadows cast which very closely resemble those of ureteral calculi both in size and location. These at first were all supposed to be ureteral calculi; but occasionally we found them on both sides and sometimes on the opposite side from the symptoms and in most cases multiple.

The first case we were sure of was operated on by Dr. Brewer at Roosevelt Hospital. The plate showed several shadows on the left side. The ureter was opened and only one of these shadows proved to be a calculus. What the others were, we do not know—probably vein-stones, or sesamoid bones in the great sacrosciatic ligament, or in some muscles.

Dr. Brown will tell you how we may solve the problem of which are ureteral calculi and which are not.

The range of positions of the renal calculi is the thing that I want to emphasize most in reading skiagraphs.

In all cases I have the tube 18 inches from the plate, vertically over the umbilicus, and I will show that the variety of positions of the stones is astonishing. Some are within one-half inch of the tip of the third lumbar vertebra, others are above and external to the tip of the last rib and in other inconceivable regions.

In order to make a negative diagnosis, the spine and transverse process of the lumbar vertebra must show distinctly clear-cut edges all the way to the tip. The last rib and psoas muscle must also show. The kidney and wall of the intestine may show but are not really necessary for even a negative diagnosis.

In 179 cases I have failed once to show a renal calculus when it was present; this failure was due to the plate not extending high enough to cover the kidney region, and twice I have made a diagnosis of a possible renal calculus where it did not exist. One of these was in a case of a man weighing 217 pounds and the mass was found to be feces; the other, a woman weighing over 200 pounds, and the shadow was covered by gall-stones and carcinomata of the head of the pancreas. In neither of these cases was I able to detect the size or shape of the supposed calculus.

THE CYSTOSCOPE AND URETER CATHETER IN THE DIAGNOSIS OF SURGICAL DISEASE OF THE KIDNEY AND URETER.[1]

BY F. TILDEN BROWN, M.D.,
OF NEW YORK.

Even a ten minutes' talk on this topic need not omit a salutation to Nitze and his coworker Leiter, but for whose incentive and genius we know not how far behind the present status the diagnosis of renal disease would be to-day. Certainly no single agent has done so much to expand the field of our specialty and given to it dignified recognition, as has the cystoscope and ureter catheter.

As an outline for discussion we may consider in the first place, what importance attaches to cystoscopic pictures of the ureter mouth in the diagnosis of affections of the upper tract? Secondly, what can be employed in like cases from the cystoscope when employed in its secondary capacity, as a medium for ureter catheterization?

The cystoscope may show a ureter mouth which, either in an active or quiescent stage, looks like any one of the various kinds experience has led us to regard as normal, such as a faintly pinkish slit in a low papilla of yellowish white mucosa; in another instance a conical dimple capping a more pronounced papilla, or but one noticeable lip at the anterior base of which lies the nearly concealed but normal ureter mouth. Although such oscula are not calculated to arouse suspicion of any trouble beyond, nor excite doubt by anything seen to issue from them, still there may be disease of an associated kidney.

On the one hand the ureter mouth may impress us at once as abnormal, in that a tumor-like body occupies its site, or, on the other hand, a decided excavation. In either case the meatus may be invisible or conspicuously gaping. When tumor-like, the color varies from a reddish opacity to a glistening white; the latter being caused by the electric light transillumination of every œdematous tissue, the same combination causing a brilliant central pink effect if one can look into the ureter at its moment of gaping emission.

Perhaps in the mouth of a bulging ureter we may see imbedded a brownish body recognized at once as one pole of a calculus, quite naturally by reason of this experience when we next encounter a similar sort of protruding edematous ureter, but see no stone, we will infer its presence at some little distance beyond.

When a lesser grade of ureteric protrusion occurs, with more or less marginal inflammation of the meatus, we may picture its cause as some antecedent infection of the kidney.

If at some part of the inflammatory zone an ulcer exists we are prone to believe in a particular kind of renal infection—the tuberculous, as the cause—and still stronger this belief, if in place of any protrusion there is a marked retraction and an irregular ulcer near where the ureter

[1] Read at the Annual Meeting of the New York Academy of Medicine, G. U. Section December 15, 1904. Symposium on Surgical Diseases of the Kidney.

mouth should be seen, such an ulcer has some surrounding hyperemia and a base so uneven as to make it difficult to know which of its various recesses will give a lead for the catheter into the ureter.

When undulating mounds of opaque reddish mucosa cover the trigonum and obliterate all trace of the ureteric papilla, and, in the midst of this nodular field, every trace of a meatus is lost, we may infer that the ureters have been for a long time discharging from faulty kidneys some sort of irritating débris or gravel upon the surfaces so disfigured.

When translucent ovoid bodies beset the mucosa about the bladder meatus or that of a ureter, we may think of some extravesical neoplasm.

When the ureter mouths are atypical in location or number we may infer some congenital abnormality higher up.

Only two of these foregoing pictures are of particular moment—the tuberculous ulcer and the imbedded calculus.

As to what may be seen issuing from the ureter. Here a fluid turbid with pus or blood admixture, mucopurulent or mortar-like material,

Fig. 1.

The author's double catheterizing cystoscope, with bottles for collecting separate urines.

all mean a pathologic state above and in conjunction with other exterior data might be enough to indicate surgical intervention, but not to give us the etiology, consequently steps should be taken to collect this abnormal efflux for examination and the same opportunity seized to gather by catheter the excretion of the other supposedly healthy kidney. Cases of traumatic hematuria in general call only for cystoscopy. As an instance, a hospital male was observed for three days in the alcoholic ward as a case of ruptured bladder—cystoscopy showed the bladder to be intact and that blood was coming from the left ureter. Diagnosis was changed to ruptured kidney which was confirmed at autopsy.

If we were compelled, or as not a few appear to be, content, to stop investigation of the renal and ureteric conditions after a wizard-like interpretation of various pictures of the ureter mouths, diagnosis of affections of the upper urinary tract would be nothing like so complete as they easily can be made, when, with a short flexible catheter lying a couple of inches within each ureter, we obtain the individual renal products for microscopical, chemical and cultural examination and perhaps supplement this test by a long ureter catheter for determination of any anatomical abnormality of the ureter and renal pelvis.

To Brenner is due the credit for first adapting the cystoscope to affect ureter catheterization. We assume whatever is due for the first bilateral cystoscope making synchronous collection of the urines feasible. The evident advantages of this need not here be rehearsed; it being understood that in renal affections, particularly of a surgical nature, it is just as necessary to know the competency of a remaining kidney as it is to know the full pathological condition of the one to be removed.

As a means of diagnosis the ureter catheter is valuable (1) by reason of what comes through it; (2) by reason of its contemporaneous service as a sound, and (3) by its use as an X-ray landmark, with which to compare other questionable X-ray shadows, or questionable and palpable tumors.

Of all our bilateral catheterization tests, those which demonstrated a unilateral renal tuberculosis were probably as a class more gratifying than any, on account of the accurate and early diagnosis, together with the practical results attending nephrectomy which substantiated the pre-operative estimate as to adequacy of the other kidney. In three of the renal tuberculous cases no abnormality was noticeable in the condition of the corresponding ureter mouth, while on the other hand the catheter secured urine containing tubercle bacilli, and the removed kidney showed the lesions.

Among the least satisfactory results from catheterization were those in cases of renal hematuria, although the doubtful source of bleeding was determined in all, the etiological factor in more than 50 per cent. was not made out, despite that in a number of the cases a reinforcement of the usual urinary tests was sought by inoculation, cultural, and X-ray tests. Such negative results naturally supported the inference of neoplasm, and this tentative diagnosis was verified in 80 per cent. by operation or necropsy.

In two male patients with symptomless, marked unilateral hematuria of moderate duration the urines were sterile. Bleeding ceased after catheterization, which, while but a probable coincidence, was still an interesting fact. Neither of these cases were among those of suspected neoplasm.

In a sixty-seven-year-old male patient of symptomless unremitting right hematuria, of long duration, the only additional right urine abnormality was a colon bacillus culture. This patient was given several pelvic lavages of adrenalin with not even a temporary effect. Although he declined operation, he bequeathed us his kidneys just before death some two weeks ago, fourteen months after onset of hematuria. He died of acute anemia and exhaustion. The only post-mortem lesion found being a hyper-

nephroma of the upper pole of the right kidney (Fig. 1).

An ambulatory forty-year-old male patient with excessive and continuous hematuria had a large left-side abdominal tumor—considered spleen, kidney or retroperitoneal lymphoma by different observers. A surprise attended the catheter test in that his left urine was normal while the right was densely bloody. Later developments showed that the patient had right renal neoplasm and great splenic enlargement.

We may review a few cases belonging to the class where the catheter served also as a sound in measuring the distance of an obstruction:

1. Thirty-year-old female; had right lumbar tumor; pain and some fever; voluntary urine normal. Diagnosis, pyonephrosis. Ureter catheterization gave normal left urine, but the right catheter remained dry and its progress was

Fig. 2.

Hypernephroma right kidney unilateral hematuria, fourteen months.

checked at 4½ inches by impacted calculus; hemorrhagic complications following nephrotomy necessitated nephrectomy. Two years later this X-ray plate showed the stone still in its original location just below the iliosacral brim.

2. Twenty-two-year-old female; intermittent right lumbar tumor; pain and fever; voluntary urine variable in quality. Diagnosis, intermittent pyonephrosis. The right ureter catheter remained dry until it was finally twisted through a stricture three inches below the pelvis, when turbid urine came continuously in rapid drops. Nephrectomy. Cure. Dr. Eliot's case.

3. Thirty-four-year-old female; left lumbar pain; sharp chill followed by fever at first every ten days, later, every month. The first such septic manifestation followed some three weeks after protracted labor and instrumental delivery. Catheter in left ureter gave no flow and its insertion was checked at six inches from the bladder. Diagnosis, traumatic stricture and complete occlusion of ureter. Septic attacks became less frequent. Now, a year after inception, three months have elapsed without one. Probable atrophy of the kidneys.

Three cases where the styletted ureter catheter was used in conjunction with X-ray pictures to elucidate diagnosis:

1. Twenty-seven-year-old female; some bladder and other urinary symptoms together with a tumor in region of appendix; thought by her physician to be displaced and diseased kidney. In evidence to the contrary was this X-ray photograph by Dr. Johnson, which shows our styletted ureter catheter extending well beyond the tumor to the normal position of the kidney. Subsequent operation proved this organ to be insequent operation proved organ to be intact.

2. Thirty-four-year-old female; where there was disagreement in regard to the organ involved by a large left abdominal tumor dipping into the pelvis. That it was not the left kidney all were satisfied when synchronous ureter catheterization gave identical and normal urines and when an X-ray of the styletted left catheter showed the kidney pelvis to be on a line with upper margin of tumor and in a normal position.

3. Forty-nine-year-old female; obscure symptoms referable to pelvic organs and left urinary tract. Ureteral catheterization suggested partial stricture of lower left ureter. Then two X-ray pictures, taken independently, showed in each a shadow easily referable to the lower part of the right ureter but a little nearer the ischial spine than a normal ureter might be expected. To determine whether this opaque object was in the ureter or not, the styletted ureter catheter was then X-rayed in position by Dr. Cole, and the resulting two shadows are seen to be more than half an inch apart. Another similar X-ray plate, but taken with oblique rays, showed the object to be behind as well as to the outer side of the ureter.

EXPLORATORY OPERATIONS RELATING TO THE KIDNEY.[1]

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When inspection, palpation, auscultation and percussion, the cystoscope, the separator, and the ureter-catheter, the X-ray and the cryoscope and the microscope have done their work, then comes the turn of the scalpel. Sometimes the operation is for the purpose of doing what the other methods of research have found necessary, and sometimes it is avowedly for the purpose of pure diagnosis, the treatment to be determined upon later.

In my experience nearly every operation on the kidney, like every abdominal section, is more or less exploratory in character, but the surgeon in addition to making and clinching the diagnosis

1 Read at the Annual Meeting of the New York Academy of Medicine, G. U. Section, December 15, 1904. Symposium on Surgical Diseases of the Kidney.

must be prepared to deal, more or less radically, with conditions as they present themselves with the patient on the table. Let us take, for example, such a disease as hypernephroma. Here hematuria may be the only really striking symptom. Palpable tumor may be absent and all that the cystoscope and allied instruments can tell us may be directed toward determining which kidney is affected and whether there is a second kidney to do the work in case the diseased one should have to be removed. The actual diagnosis can be revealed only at operation when, as a rule, nephrectomy is indicated and should be at once performed.

As to this matter of the presence or absence of the "other" kidney, it is well to remember that about one person in 2,500 is what may be termed "mononephric" that is, has but a solitary kidney, which naturally forbids nephrectomy, so when the cystoscope fails to disclose two ureters it is safer to make a quick exploratory incision in the suspected loin to assure ourselves of the presence of the necessary "other" kidney than to remove even a hopelessly diseased solitary one —an accident which it was the writer's fortune to witness in a case operated upon by a colleague. When once encountered, such a disaster makes a profound impression and the possibility of the danger is not likely to be again overlooked.

Another condition in which the presence of a second kidney healthier than the suspected one cannot be demonstrated by the cystoscope, is that of nephrocystosis. Here a rapid exposure of the apparently normal side may reveal a condition so much like the one for which operation was undertaken, that it would be better to abandon further surgical steps. Certain renal cysts are very apt to be symmetrical, in which case nephrectomy would probably do no good.

Obese individuals, in whom tumor has been palpated on the right side because of the greater mobility of the right kidney, may have a tumor of equal size on the left and yet its situation beneath the ribs and behind a thick abdominal wall may prevent its discovery without incision.

In most infections of the kidney, in palpable tumors and in calculus, the various clinical non-operative methods will yield, in the great majority of cases, a general diagnosis. The actual extent of the disease, however, it may be impossible to foretell without operation, and therefore I repeat, that in a wide sense, every operation upon the kidney is exploratory in character. Surgical exploration must often be very thorough so that small but important points may not be overlooked. Indeed, when a case is not perfectly clear on exposure of the organ, the kidney must be drawn out of the wound, its vessels compressed by an assistant and systematic search made for abscesses, cysts, small calculi or tumors the existence of which is suspected. It may even be necessary to incise the kidney from the ischemic line in its convex border into the pelvis in order to make a diagnosis by exclusion.

Hemorrhage from the kidney is often a most obscure symptom, which nothing short of operation will clear up and which even a most careful operation may fail to explain.

A few years ago a woman, of thirty-five years of age, was admitted to my service at Mount Sinai Hospital with severe hematuria. The hemorrhage was intermittent, ceasing entirely for days at a time. During periods of quiescence the cystoscope was valueless except to demonstrate that the blood did not come from the bladder, and during the active hemorrhage bleeding was so profuse that no cytoscope could show whence it came. The clear urine showed an apparently mild nephritis. The patient became anemic to the verge of exsanguination, when during a sharp hemorrhage suprapubic cystotomy was done and the blood in great spurts was seen to come from the right ureter. Right nephrotomy was at once performed and nothing found. An olive-tipped, soft woven urethral bougie was passed through the urethra and guided into the right ureter with the help of the finger in the suprapubic wound. The instrument was large enough to fill the ureter completely and check the hemorrhage. The kidney was then carefully packed, the wound left open and the patient put to bed.

She died of acute anemia. A careful autopsy by Dr. Libman, of the Pathological Department, failed to show one single break in continuity from the pelvis of the kidney to the bladder. The mucosa of the pelvis and entire ureter was most carefully inspected and no abrasion or ulceration found. The microscopical examination of the kidney showed what the urine had already indicated,—that there was nephritis. This then was a fatal case of pure hemorrhagic nephritis which could not have been absolutely diagnosed by anything short of a microscopic examination of a piece of the kidney *plus* the exclusion of all other causes for the hemorrhage by means of a complete examination of the entire urinary tract. Even exploratory nephrotomy was useless except to aid in exclusion. I have seen other cases of hemorrhagic nephritis in which nephrotomy permanently checked the bleeding.

To sum up we may state that

A. Exploratory operation is probably the surest method of diagnosis in suspected surgical disease of the kidney.

B. The indications for its performance are: (1) In hemorrhage from one or both kidneys when other measures have failed to check the bleeding and the danger signals appear. (2) In palpable tumor with symptoms pointing to renal disease. Sometimes even to establish whether the tumor is kidney, gall-bladder or some other organ. (3) Without palpable tumor when there is reason to suspect surgical renal disease and when medical, hygienic and local treatment fail to give relief.

C. Exploratory incision may be necessary to demonstrate the condition of solitary kidney.

MEDICAL PROGRESS.

SURGERY.

Etiology and Pathology of Coxa Vera.—The number of cases of this disease, in which an anatomical or microscopical examination has been made, is relatively small, and for this reason considerable interest to the report of a case in which it was necessary to do a resection of the head of the femur. A. SCHLESINGER (*Archiv f. klin. Chir.*, Vol. 75, No. 3) studied the specimen very carefully, and found that this was an instance of a purely traumatic separation of the ephiphysis. Reference to the history showed that the patient, a girl of fifteen years, had never had any pains previously, but that the symptoms came on immediately after the injury, a fall on the side, and continued up to the time of operation. There were no other evidences of disease. The relation of traumatic separation of the epiphysis to coxa vera has never been definitely cleared up, and an effort is made by the writer to gain some conclusions from the few cases reported in which anatomical and histological studies were made. Of these there are twelve. It seems that in no case of coxa vera at puberty were any evidences found, either macroscopical or microscopical, of rachitis or osteomalacia. Furthermore, the softening of the spongy tissue in the head of the bone is due to an insufficient nutrition of the displaced segment. In healthy individuals the locus minoris resistentiæ is the epiphyseal line, whereas in rachitic children it is the entire neck of the femur, because an epiphyseal separation occurring in a rachitic child has never been recorded. The author believes that in ordinary cases it is the continued trauma which gradually bring about a displacement of the head of the bone at the epiphyseal junction, and that this is the cause for the advancing deformity, as the nutrition of the head of the bone suffers.

Prostatectomy Under Local Anesthesia.—The problem of prostatic hypertrophy, even with the many resources recently introduced and developed, still offers in certain cases many difficulties in its solution. Prostatectomy, when carefully performed, is generally recognized as the ideal procedure, but the dangers of the operation are chiefly from the anesthetic and hemorrhage. Spinal cocainization has been largely given up on account of its uncertainties, and now M. B. TINKER (*Jour. Am. Med. Ass'n*, February 11, 1905), with a proposition to employ local anesthesia. He advocates a solution of beta eucaine, 1 to 500, with an addition of adrenalin chloride to make it 1 to 120,000, or even weaker, where large quantities are found necessary. The use of the adrenalin not only limits the amount of bleeding, it also prevents the absorption of the anesthetic drug, and reduces pain and congestion after operation, and finally acts as a stimulant. It is necessary to have an accurate knowledge of the anatomy of the region in order to employ this method effectively, and the first step is the infiltration of the main trunks from which the various nerve branches take their origin. Taking the tuberosity of the ischium as a landmark, the needle of the syringe is inserted in the skin about one inch in front and internal to the tuberosity. After the superficial tissues are infiltrated, a stronger solution of eucaine (0.5 per cent.) is injected at a depth of from one to two inches in the region of the ischiorectal fossa. Finally, a weak solution is injected along the line of the proposed skin incision. The operation itself is practically that described by Young in the *Journal* of the American Medical Association of October 26, 1904. A case is reported in which the method was used with very satisfactory results, in a very much emaciated and weakened patient, and a second case is merely noted, in which equally good results were obtained.

Syphilis of the Liver in the Diagnosis of Abdominal Tumors.—The fact is becoming gradually established that syphilis of the internal organs may play an important rôle in the diagnosis, even when the clinical picture points to functional disturbances of inflammatory processes accompanied by fever. For a long time specific disease of the internal organs was always associated with the other classical symptoms of the disease, but it has more recently been admitted that such lesions of various organs may appear without any other symptoms which might be designated as luetic. For it must not be forgotten that the original infection may have escaped notice, and likewise the primary and secondary stages of the disease may have been marked by very slight disturbances. An interesting contribution to this subject has lately been published by Prof. KÖNIG (*Berl. klin. Woch.*, February 6, 1905), who reports three cases who suffered from attacks of pain in the hepatic region, but who presented no evidences of functional liver disturbances, no loss of appetite or weight. In each instance a diagnosis of hepatic tumor was made, and in one case a movable mass was made out, which was believed to be connected with either the liver or the kidney. An exploratory laparotomy showed that the tumor was a lobe of the liver, which, together with the rest of the organ, was covered with grayish nodules. As the liver and stomach were adherent, it was assumed that a carcinoma of the stomach furnished the primary focus for the supposed multiple metastatic deposits in the liver. After the patient recovered from the operation, a treatment with mercury and the iodides was instituted, and all the symptoms, including the tumor, disappeared. No history of syphilis could be elicited. Similar conditions were found in the other two cases, in which operation had also been done for the relief of symptoms. Impressed by the importance of this subject, König made some further studies, and now believes that the luetic growths of the liver may be divided into two classes—the first consisting of flat, hard, irregular swellings on the surface of the organ and within the percussion boundaries; and the second, of masses apparently separated from the liver, which are often movable, nodular, round or kidney-shaped, attached to the viscus by a pedicle and representing a large portion of the same. The question of operation in these cases is a very important one. Where the least doubt exists, a mercurial treatment may be tried, although it must not be forgotten that in isolated cases no results are obtained. Moreover, in one of the author's cases, no effect was secured with mercurials before operation, but a very pronounced one followed the employment of the same means after laparotomy. There may be circumstances which urge operation and the dictum, "do not operate because the condition is due to lues," should not be overdone. In the one case which the author reports it was certainly justifiable to remove the pedunculated growth, and he concludes with the statement that where an exploratory celiotomy reveals the presence of syphilitic disease, any removal of affected tissues must be entirely governed by the findings in each individual case.

Strangulated Hernia in the Very Old.—D. C. PEYTON (*Am. Med.*, February 18, 1905) believes the process of inflammation of the imprisoned loop offers a satisfactory explanation of the cause of strangulation. The obstructive venous congestion is the first step in the inflammatory process, and this inflammatory process, begun in obstruction, by pressure engorgement is the result of the increased activity and virulence of *Bacillus coli communis*, and several varieties of the staphylococcus and streptococcus, which, if not arrested, results in gangrene and death. The treatment is operative only, and the earlier the operation the more satisfactory will be the results. He believes taxis is not only a mistake but a menace to the life of the patient and should never be resorted to. Extreme age should be considered a bar to operation, the patient's general condition should be considered only. In the very old, the minimum degree of general anesthesia is desired, so that the injection locally of Schleich's solution along the line of incision has proved of great advantage by reason of its local effect. When the heart is weakened, the use of oxygen alternating with ether is an excellent precaution. Old people do not stand confinement to bed, so it is of greatest importance to get your old patient out of bed and into an invalid chair in not longer than four or five days. Turn them to the sound side in twenty-four hours after operation. Frequently success may be dtermined by this fact. Less that a year ago Peyton operated on a woman of eighty-four less than eight hours after strangulation of a femoral hernia. The sac was opened and extensive adhesions broken up, the omentum well pulled down, ligated and cut off, the intestine returned to the cavity, and the ring closed with the pursestring suture. The patient made an uninterrupted recovery, was out of bed and in an invalid chair in four days, and in seventeen days walked.

Simultaneous Stenosis of the Pylorus and Intestine.—This combination of lesions has been observed by E. PAYR (*Archiv f. klin. Chir.*, Vol. 75, No. 2) in eight cases and from a careful study of the subject, he lays stress on the following points. He finds that this double form of stenosis occurs most frequently with round ulcer of the stomach which is complicated with perigastric changes, and the lumen of the gut is narrowed by the resulting adhesions. Fibrous strictures of a syphilitic character may also occur in the stomach and intestine of the same individual, and where this is the cause, treatment is very satisfactory. Therapeutic measures are of little value, however, where malignant neoplasms cause the gastric stenosis and where the intestinal stenosis is due to metastases. Aside from these there are also a large number of other etiological factors in the production of this condition. There are definite forms of perigastritis, which may bring about stenosis of the gut either close to or at some distance from the stomach. A very typical form of constriction of the large intestine is caused by the retraction of the transverse colon toward the region of the ulcer, while those which involve the small gut are more irregular in character. There are well-marked distinctions, both clinical and anatomical, between a cicatricial constriction of the pylorus and these adhesion and compression deformities, in the latter case, the higher grades of ectasia are often absent. A stenosis of the pylorus may mask to a great extent that of the intestine, and after its removal, occlusion of the intestine may suddenly come on. In the extreme degrees of intestinal stenosis, a pyloric constriction may be masked by the threatening intestinal symptoms, and where a chronic stenosis of the gut exists, the gastric symptoms may be readily overlooked and do not become prominent until the intestinal occlusion has been relieved. Cicatricial stenosis of the pylorus do not constitute any hindrance to the retrograde flow of the intestinal contents into the stomach, the rigidity of the tube preventing a complete closure of the lumen. With the aid of various diagnostic measures, which he describes, it is often possible to make a differential diagnosis, the most effective being the test for gastric ectasia by Boas' method and the presence of hyperperistalsis in the gut, in a different direction and at a different time than in the stomach. If operation is undertaken, the twofold nature of the trouble may often be recognized under certain circumstances by the hypertrophy of that section of gut lying between the pylorus and the site of the intestinal constriction. If an operation is decided on, it is necessary that both obstructions be removed at once. Where perigastric adhesions exist, no matter what their etiology, it is imperative that the remainder of the intestinal canal be carefully examined, as constriction in the small or large intestine may readily be overlooked and in this way invalidate the results of a gastro-enterostomy.

Traumatic Rupture of the Intestine Without Injury to the Abdominal Wall.—C. P. FLINT (*Med. Rec.*, February 18, 1905) is an advocate of prompt exploratory incision in doubtful cases of abdominal trauma. His conclusions are summarized as follows: (1) Any injury to the abdomen may be associated with drainage to the intestine or other viscera; (2) an exploratory operation is justifiable in cases with distinct rigidity; (3) an operation is absolutely indicated when there are, besides rigidity, pain, tenderness, vomiting, shock, dulness, or other symptoms indicative of some intra-abdominal disturbance. (4) Cases not operated upon are lost. (5) The importance of early operation cannot be emphasized too strongly. (6) At present the death rate is about 75 to 80 per cent. (7) When early operation is the rule the death rate will be much lower.

Diabetes in Surgery.—Ephemeral traumatic glycosuria and the induction of narcosis in diabetics are two subjects discussed by W. KAUSCH (*Archiv f. klin. Chir.*, Vol. 74, No. 4) as of particular moment at the present time. He has observed an increasing number of cases where glycosuria followed injuries, nine of which were fractures and two contusions. In every case the urine shows the presence, soon after the injury, of not more than one per cent. of sugar, the entire quantity of which during twenty-four hours may run up to 15 grams. The other manifestations of diabetes were usually absent, due most likely to the small amount of sugar present, and the condition lasted from one to eight days. Kausch found that these cases were not of the so-called latent variety, during the course of which the trauma has brought about an exacerbation of the diabetes. He was also able to show that these patients manifested a well-marked tolerance to carbohydrates, and failed to exhibit any alimentary glycosuria within a few days after the injury. The writer's observations show that there are individuals who are perefectly normal under ordinary circumstances as regards their metabolism of sugar, but who present a distinct glycosuria under the influence of a trauma. The condition depends on two

possible explanations,—there is neither a reflex action of purely mechanical concussion on the nervous system, or the effect of the trauma is a psychical one. The author is inclined to accept the latter theory, and believes that as the result of this same disturbance a true diabetes may even be developed. In discussing the question of narcosis in diabetic cases, Kausch submits the following statements. In the first place, general anesthesia should be restricted as much as possible and local anesthesia employed, unless specially contra-indicated. Narcosis for purely diagnostic purposes should be avoided, and successive anesthesias without sufficiently long intermissions cannot be permitted. Ether is preferable to chloroform. The quantity used and the length of the anesthesia should be contracted as much as possible. Inhalation anesthesia in diabetics had best be done early in the morning, so that the time of abstinence from food shall not be prolonged any longer than is absolutely necessary. Particular attention must be given to the nourishment both before and after the operation. Every case, even where the local anesthetic is employed, must be given a preliminary treatment with the bicarbonate of soda method, until the urine has an alkaline reaction. By this means the acid intoxication of true diabetic coma may be neutralized to a certain extent. When possible the anesthetic should be given when the patient is free from sugar excretion, but not until this has been established for some time. If coma threatens, or is present, the soda administration must be pushed, per os, anum, subcutaneously and intravenously.

The Effect of the Removal of the Thyroid on the Genital System.—The relation between the thyroid gland and the genitals has been studied by LANZ (*Archiv f. klin. Chir.*, Vol. 74, No. 4) in a series of animal experiments. He found that in dogs, rabbits, hens, and goats, procreation was usually impossible after thyroidectomy. Two human subjects were also under observation. A man, ten years after total thyroidectomy, presented the picture of cretinism. At the age of twenty-eight years he had never had the slightest sexual desire, no erections and no pollutions. Three months after the administration of thyroid extract was begun he began slowly to manifest sexual desires, which he was able to satisfy by coitus. Later he married, but the union remained childless. Within a few weeks after the administration of the thyroid was stopped his other symptoms returned, and the sexual desire declined. In the other case, that of a woman, amenorrhea was present, but after the use of the thyroid extract for several months, the menses gradually appeared. The girl remained unmarried.

MEDICINE.

Aloin Test in Typhoid.—The feces of 18 cases of typhoid were examined systematically with the aloin test for traces of blood by C. PETRACCHI (*Zeitsch f. klin Med.*, Vol. 56, Nos. 1 and 2). The more severe cases were postitive more often than the milder ones and the greatest frequency occurred during the second and third week. It is possible to predict a large hemorrhage by this method, since the first trace of blood may often be detected one to five days before. Frequently the pulse increases 12 to 22 beats per minute with the first appearance of blood and a hemorrhage is then almost certain. In such cases the baths should be used more carefully or stopped altogether until the dangerous period has passed.

Cryptogenetic Fever.—Fevers of obscure origin are divided by C. BOZZOLO (*Wien. klin. Therap. Woch.*, January 1 to 8, 1905) into the following classes: (1) Fevers where the origin can only be detected at autopsy. The most common example of this class is endocarditis ulcerosa. (2) Fevers whose cause is detected during life, though late. This interesting group includes the recurrent rises of temperature so common with leucemic and pseudoleucemic glandular enlargements. The focus may be extremely small as in prostatic abscesses after gonorrhea or intra-urethral manipulation. Obscure abscesses may also form about the anus, and the antrum of Highmore should not be overlooked as possible source. The possibility of a chronic septic endocarditis or of a pyelitis in young subjects should not be forgotten. (3) There is a special form of glandular fever, suggesting a tuberculous fever and accompanied only by glandular swelling. Occasionally, hypertrophic tonsils will give rise to fever which disappears when the tonsils are removed. (4) Another type of fever may be termed "precarcinomatous." The tumor (generally carcinoma, more rarely sarcoma) may not yet be evident, especially when it develops in the deeper part of the abdomen. The curve is often intermittent, suggesting malaria. Carcinomata of the stomach, liver, ovaries, uterus and mediastinum most frequently run with fever. In one case observed by the author, a specific germ could be isolated, both from the tumor and the circulating blood. (5) Very frequently, tertiary syphilitic manifestations will be responsible for an obscure fever. The type is generally quotidion, intermittent and irregular, without very high rises, and long periods of apyrexia may be interposed. Antisyphilitic treatment is very prompt in its action. (6) Nervous and hysterical fevers are characterized by great irregularity both as far as height and duration are concerned. The highest temperatures on record are recorded in hysteria, but the fever is rarely distributed uniformly over the body. (7) The last group, cryptogenetic fever proper, includes all forms of bacteremia or septicemia with late localization, which are generally cleared up by a bacteriological examination of the blood. The course is usually acute but may also be so chronic as to suggest a malignant tumor somewhere in the body. This class may be again subdivided, according to the germ found in the circulating blood, as follows: (*a*) in pure *Streptococcus mycosis*, there is an irregular, intermittent course, with moderate fluctuations, but exceptions are common. A regular, continuous fever is, however, rare; (*b*) staphylococci generally give rise to a continuous or slightly remittant fever; (*c*) pneumococci behave like staphylococci; (*d*) *Bacterium coli* and the gonococcus generally cause an exquisitely intermittent fever, with rapid rise and falls; (*e*) mixed infections also give rise to an intermittent curve. These rules only apply in a general way, since the amount of bacteria and their localization also play a prominent rôle. In simple bacteremia without localization, the type is continuous or remittant, while in puerperal sepsis with numerous metastatic abscesses or in ulcerating endocarditis, the type is more intermittent. Occasionally a sepsis may follow an infectious disease and need not necessarily be caused by the same germ as the infectious disease. The author has observed streptococci, staphylococci and diplococci in the blood after typhoid, and in one rare case diplococci and staphylococci were isolated during different periods. The therapy of sepsis is as yet

in its infancy, and it is to be hoped that ere long serum-therapy will advance so that a remedy will be at hand for every given case. Little can be expected from quinine or the endivenous application of sublimates, but collorgol is sometimes followed by good results.

Endemic Occurrence of Myelogenous Leucemia.—Since three cases of myelogenous leucemia from the same town were treated in the clinic at the same time, LANSPERGER (*Münch. med. Woch.*, January 3, 1905) took a trip to the surrounding country, and was surprised to encounter eight more cases. It is very difficult to explain these endemic cases, but some common infection seems to be probable. The following important facts could be obtained: The entire valley was visited by a severe typhoid epidemic a few years ago. It is therefore possible that toxic or mechanical insults to the spleen predispose to a disease in which the spleen plays so prominent a part. The hygienic conditions were very poor and the supply of water not of the best, since the inhabitants relied chiefly upon wells.

A Review of Recent Literature on the Relation of Human and Bovine Tuberculosis.—D. BOVAIRD (*Med. Rec.*, February 25, 1905) discusses the experimental work done, and the results obtained, by American and European investigators in their attempts to settle the question raised by Koch in 1901, when he affirmed the independence of human and bovine tuberculosis. After considering the evidence pro and con, the author sums up his views by saying that it appears that human tuberculosis can be transmitted to cattle but with difficulty, and it seems highly improbable that such transmission plays any great part in the production of the disease among cattle. Bovine tuberculosis can be transmitted to man, but the evidence that such transmission occurs under ordinary circumstances is extremely scanty, and it is highly improbable that such transmission plays an important part in the spread of the disease in man. An important feature in the research work done, has been that relative to the infection of children through the intestine, and of this the author says that despite the discordant results noted, it seems that it can safely be said that the greatest weight of evidence is against frequent infection of children through the intestine, that is through food, and that one cannot, therefore, consider that tuberculous milk is frequently the means of conveying the infection.

Classification of Gastric Ulcers.—A. L. BENEDICT (*Am. Med.*, February 18, 1905) urges the same general use of the term ulcer in the case of the stomach, as of other parts of the body, first because there is no unanimously accepted definition of gastric ulcer and, second, if there were, it would be impossible to make all cases correspond to it. Without hemorrhage or opportunity for inspection, the diagnosis of ulcer can only be tentative, but a diligent search should be made for small hemorrhages. If hemorrhage is clinically demonstrated to be from the stomach, it almost always means an ulcer in the proper general sense of a solution of superficial continuity. He classifies ulcers of the stomach, including certain conditions associated with hemorrhage, as follows: (1) Peptic ulcer, the most frequent, occurs in patients who do not have apoplexy, thrombosis, embolism and organic vascular lesions elsewhere and in whom a primary organic basis for the necrosis is untenable. He asserts that the digestion of the necrotic area is not simply an erosion by excess of HCl and he is also skeptical as to the uniform association of hperchlorhydria and peptic ulcer. (2) Superficial erosions due to chemic and thermic caustics. (3) Ulcers due to vascular lesions, occurring in syphilitics and in elderly persons. He reports such a case in detail and alludes to others. (4) "Catarrhal" ulcers, analogous to eczematous ulcers of the skin, not strictly separable from the foregoing, but without definite, conspicuous, local vascular lesions. (5) Varicose ulcerations, due to venous obstruction and, practically, almost always to hepatic sclerosis. (6) Toxemic diapedesis, as in scurvy, purpuras, etc. (7) Vicarious menstruation. (6 and 7 are not true ulcers.) (8) Gangrenous ulcer. Such cases usually illustrate 3 and 4 and, still more frequently, cancerous ulceration and do not really constitute a distinct, pathologic type. (9) phlegmonous ulcers. Unless due to pyemia or subphrenic or other abscess contiguous to the stomach, such ulcers are usually due to iodin poisoning. (10) Specific ulcers include exanthematous, pneumococcic, tuberculous, syphilitic actinomycotic and similar conditions due to special germs and, by an extension of terms, those due to the breaking down of neoplasms, especially cancer. (11) Traumatic ulcers, due to foreign bodies, hard particles in food, crushing injuries, gross parasites, etc.

Copper Foil in Destroying Typhoid and Colon Bacilli in Water.—HENRY KRAEMER (*Am. Med.*, February 18, 1905) carried out a series of experiments for testing the efficiency of the copper method for the purification of drinking water. The experiments were made mostly with copper foil rather than copper sulphate. It was found that in every instance colon and typhoid bacilli were completely destroyed in less than four hours by placing strips of copper foil in water containing pure cultures of these organisms. In the duplicate experiments, namely, in those in which no copper foil was used, it was found that the organisms persisted and continued to multiply even for sixty days. Kraemer considers it extremely fortunate that in the copper treatment of water a method has been devised which is so effective in destroying intestinal micro-organisms and which can be applied so easily on a large scale and so safely by the average householder. The method suggested for domestic purposes consists simply in placing a piece of copper foil 3½ inches square in a quart of water, allowing this to stand from six to eight hours, or over night, at the ordinary temperature, and then removing the foil or drawing off the water.

Intestinal Putrefaction in Catarrhal Jaundice.—The amount of ethereal sulphates present in the urine has been considered a means for estimating the intensity of intestinal putrefaction in any given case. It is claimed, however, that not all the aromatic bodies which are produced in the intestine take this form—only a part appearing as ethereal sulphates, the other as glycuronic acids, etc. The proposition was therefore made to make quantitive estimates of one product, such an indican. F. BLUMENTHAL (*Berl. klin. Woch.*, January 30, 1905) reports a case of catarrhal jaundice in which this test would have shown the intestinal putrefaction to have been abnormally diminished in degree, because on certain days the indican excretion in the urine was practically nothing, and not until convalescence was established and a sufficient quantity of bile was present in the gut were any considerable amounts of indican present. The quantity of phenol excreted, however, was sometimes more

than double the normal amount. The writer believes that the volatile fatty acids in the urine afford a better means of making an estimate as to the degree of intestinal acid fermentation, but that an absolute index cannot be obtained from a mere estimation of the indican, phenol and ethereal sulphates as to the degree of intestinal putrefaction in the gut. In addition to these, it is also necessary to determine the amount of volatile acids, in order to find out whether acid fermentation may not be taking the place of the production of aromatic bodies.

PHYSIOLOGY.

The Selective Action of Cocaine on Nerve Fibers.—Two hypotheses may be advanced to explain the action of cocaine, according to N. E. DIXON (*Jour. of Physiol.*, December 30, 1904). He first considers cocaine a general protoplasmic poison; the sensory nerves are affected because they are more exposed, the motor ends are not affected because cocaine does not reach them. The second hypothesis holds that cocaine specifically affects the sensory nerve endings, just as curare affects only the motor end-plates. The experiments of the author show that cocaine applied distally to nerve-fibers picks out and paralyzes some fibers before others, the sensory before the motor, the vagus fibers conducting upward before those conducting downward, the vasoconstrictors before the vasodilators, the bronchoconstrictors before the bronchodilators. It is suggested that the local application of cocaine to the vagus may be the means of combating death during early chloroform narcosis. Drugs which affect the central nervous system almost invariably attack the sensory cells and fibers before the motor. There is no reason to suppose that cocaine has a specific action in the sensory nerve-endings.

Relation between the Thymus and Sexual Organs.—For some time an intimate relationship between the thymus and the sexual organs has been recognized. According to D. N. PATON (*Jour. of Physiol.*, December 30, 1905), who submitted this observation to an experimental test, Paton and Goodall noted that in guinea-pigs the thymus increases in size during the first two months and begins to atrophy only when the animal reaches sexual maturity. J. Henderson found that castration in cattle delays the onset of atrophy of the thymus. From these observations the conclusion was drawn that the life history of the thymus is closely related to that of the testes; the onset of atrophy of the thymus is dependent on or is determined by the maturation of the sexual organs. The question which the author asks himself, and to the solution of which he devoted a series of researches, was, Does the thymus in turn exert any influence upon the sexual organs? The results of his experiments show that in male guinea-pigs weighing less than 300 gms. (*i.e.* before the time the thymus begins to atrophy), the removal of the organ is followed by a more rapid growth of the testes. Hence there is a reciprocal relationship between thymus and testis, each checks the growth of the other. In females, on the other hand, removal of the thymus does not markedly accelerate the onset of sexual maturity.

The Effect of Alcohol upon the Viscosity of the Blood.—That the viscosity of the body-fluids is one of the important determining factors in the metabolic exchanges in the body, may be gleaned from the recent experiments of Traube, Overton and others. The question as to whether alcohol would effect this viscosity is not, would therefore be of considerable importance from many points of view. R. B. OPITZ (*Jour. of Physiol.*, December 30, 1904) found that while 0.770 Na Cl solution causes a very distinct decrease in the viscosity of the blood, as determined by means of capillary tubes, a similar amount of alcohol causes an increase in viscosity. This occurs whether the alcohol is injected directly into the circulation or into the digestive tract. The effect is quick and marked when the alcohol is injected into the stomach or duodenum. The maximum increase occurs five to ten minutes after the injection, and the effect lasts at least one and a half hours.

The Gaseous Metabolism of the Kidney.—The production of diuresis is accompanied by a marked increase in the absorption of oxygen by the kidney, but not in proportion to the degree of diuresis produced, according to J. BANCROFT and T. G. BRODIE (*Jour. of Physiol.*, December 30, 1904). There is no definite relationship between the amount of oxygen taken in and the amount of CO_2 given out at any moment. Moreover, the latter is in excess of the former. This is especially the case at the beginning of the experiment before diuresis has been set up. The onset of diuresis is not necessarily accompanied by an increase in the rate of blood-flow through the kidney. If an increase of the latter is ever present it is never in proportion to the acceleration in the flow of urine.

The Universal Presence of Erepsin in Animal Tissues.—A peptone-splitting ferment, erepsin, was disvovered by Cohnheim in the intestinal mucosa, and has been supposed by this investigator to be in distinct relationship to the digestion of the partially hydralized proteids. H. M. VERNON (*Jour. of Physiol.*, December 30, 1904) finds that this ferment is present in all the tissues of a large number of animals examined, from the fresh-water mussel to the cat; the higher up in the scale of animal life the species is, the richer are the tissues in the content of erepsin. The same tissue in various animals shows the same relative amount of erepsin. The ereptive value of a tissue is subject to change. The various tissue-erepsins are probably to some extent specific. The universality of erepsin indicates that the theory that erepsin is concerned in the digestion of the partially hydralyzed proteids in the intestine is probably incorrect.

The Pancreatic Lymph-Flow.—The interest which has been aroused within recent years in the physiology and pathology of the pancreas, particularly with reference to derangements of glycolytic metabolism, gives a certain degree of importance to every study, however limited, into the metabolic phenomena that accompany pancreatic activity. An investigation into the nature of the lymph-flow from the pancreas was made by F. A. BAINBRIDGE (*Jour. of Physiol.*, December 30, 1904). The recent discovery of an activating substance extracted from the mucous membrane of the small intestine, and called "secretin," which when injected into the circulation causes an increased flow of pancreatic juice, enabled the author to study the effect of secretin upon the flow of lymph from the pancreas. The injection of secretin caused an increase in the flow, even after ligation of the portal lymphatics. There is evidently a close relationship between the secretion of pancreatic juice and the increased flow of lymph. This is derived entirely from the pancreas, and is proba-

bly formed as the result of metabolic changes occurring in the pancreas during the secretion of juice.

The Mechanism of the Storage of Poisons in the Liver.—The anatomical position of the liver and its great size suggest for this organ an important filtering function, depriving the blood coming from the intestines of poisons that may have been absorbed. A careful study of the manner in which the liver takes up and fixes these poisons was made by ZOLTAN DE VÁMOSSY (*Arch. Internat. de Pharmaco, et de Therap.*, Vol. XIII, Nos. 3 and 4). Copper, injected into the portal vein, is fixed by the nucleo-albumins and albuminoids of the hepatic cells. Mercury is stored up in the globulins of these cells, the nucleo-albumins and the nucleins assisting. The nucleo-albumins principally and also the nucleins have the power of fixing arsenic. In fatty degeneration of the liver, the capacity of storing up the metals is diminished. This is also the case during starvation. The liver stores up half of the alkaloids that traverse it. The tetanizing dose of strychnine that must pass through the liver is just twice that of the drug when introduced under the skin. Toward atropine the liver behaves in the same way as toward strychnine. The amount of glycogen in the liver has no effect upon its storage capacity with respect to poisons. The nucleins hold the alkaloids not merely mechanically, but fix them in chemical combination.

PATHOLOGY AND BACTERIOLOGY.

Changes in the Trachea in Advanced Age.—If the trachea be filled with plaster-of-Paris before it is opened at autopsies, it will be found that a saber-shaped organ is very common in old age. The shape is similar to that found with compression by a goiter, but involves almost the entire tube, down to the bifurcation. Frequently there is also a moderate degree of torsion. Ossification of the treachea is also common and can be easily demonstrated by examination with the Roentgen rays. Chronic catarrh of the tracheal mucous membrane and emphysema of the lungs are frequently combined with stenosed trachea and are probably a direct result of the constriction. Dilatation of the trachea may also occur, but is less common, according to M. SIMMONDS (*Virchow's Archiv*, Vol. 179, No. 1). It is due to insufficient resistance on part of the tracheal cartilages, aided by frequent coughing.

Experimental Migration of Lymphocytes.—It is known for some time that mononuclear leucocytes are able to migrate, though to a less degree than polynuclear cells. F. PRÖSCHER (*Virchow's Archiv*, Vol. 179, No. 1), now reports a method whereby one may obtain an exudate which contains lymphocytes almost exclusively. A suspension of intracellular tuberculotoxin in normal salt solution is prepared in the usual way and then injected into the peritoneum of guinea-pigs. Several hours later, some peritoneal fluid is removed by means of a glass pipette, and examined under the microscope. A large number of perfect lymphocytes will be encountered and in addition, the formation of lymphocytes from endothelial cells may be observed. A similar process goes on in every tubercle, the toxin stimulates the fixed tissue-cells to form the so-called epitheliod cells; the succeeding layer of small round cells results from the epithelioid cells, while the peripheral layer of round cells is directly due to chemotactic action.

Tuberculous Processes and Lymphocytes.—From clinical and experimental observations, C. J. FAUCONETT (*Deutsch. Arch. f. klin. Med.*, Vol. 82, Nos. 1 and 2) concludes that the lymphocytes are not specifically affected by tuberclin or by the presence of tuberculous processes in the body. The tuberculous toxins, like other bacterial toxins, may exert chemotactic action solely upon the polynuclear, neutrophile cells. It is true that a preponderance of lymphocytes occurs in most tuberculous exudates, and as cerebrospinal and pleural fluids, yet they merely show the local influences of the tuberculous process. If the blood be examined in such cases, polymorphous cells will generally predominate.

Origin of Blood-platelets.—The so-called spindle cell found in frog's blood do not correspond to the platelets of man, but are more closely related to leucocytes. According to E. HELBER (*Deutsch. Arch. f. klin. Med.*, Vol. 82, Nos. 1 and 2) frogs and even birds do not possess platelets; the blood of the mammals, on the other hand, contains platelets but no spindle cells. In the rabbit embryo, at first only mother cells containing hemoglobin are found. After the thirteenth day, the nuclei are extended, generally without affecting the protoplasm, yet sometimes the nucleus dissolves in the protoplasm, destroying the cells. Leucocytes are not present at this stage, but blood-platelets are abundant. These latter make their appearance as soon as the nucleus is cast off, and, like this, are made up of a chromatic and an achromatic substance. After the twentieth day platelets are no longer formed in the blood itself but chiefly in the liver and red bone-marrow. The author distinguishes between plasma platelets, originating from the cell-protoplasm, and nuclear platelets. The number of platelets present will give a good idea of the function of the bone marrow, thus, in anemia with many platelets, the regenerative powers are good, and vice versa.

Abnormal Pathological Processes in Carcinoma.—It has been shown that the X-rays have the property of modifying the fermentative processes in carcinoma cells and also that in the autolysis of hepatic cancer a characteristic substance is formed, free reducing pentose, which does not occuur in the autodigestion of the normal liver. The same author, C. NEUBERG (*Berl. klin. Woch.*, January 30, 1905), has now made some further studies, using in addition to the metastatic deposits in the liver also material from the primary focus in the stomach. It was found that autolysis showed no free pentose when the primary growth was subjected to the process, but that the hepatic growths yielded abnormally large amounts. It must, therefore, be assumed that, in the migration of the original cancer cells from the stomach to the liver, some change in the original ferments were produced or else new ones were acquired. Tests were also made of the action of the hepatic tissue on the lung tissue of the same individual, the autopsy showing that the latter was absolutely free from cancerous deposits. The digestion experiments showed that an exact reverse of the normal conditions was present. The carcinomatous extract produced an abnormal decomposition of the pulmonary albuminoid bodies, but is not able to break up the albumoses, as occurs normally, and these probably reach the circulation. The author intends to bring forward further proof of these claims, but thinks that this transposition of important cell functions, acquiring new fermentative processes on the one hand or loosing specific enzyme properties on the other, has an important bearing on the production of cachexia.

Diagnostical Importance of Bactericidal Action of Blood in Typhoid.—If the bactericidal action of

the blood is to be determined instead of the agglutination test, to insure a diagnosis of typhoid, the procedure would be as follows: The serum to be examined is diluted 1:50. A number of small test-tubes are filled, each with one c.c. of physiological salt solution except the first one, which contains only one c.c. of the diluted serum; a number of dilutions are thus prepared, which are then mixed with half a c.c. of broth culture of typhoid bacilli and half a c.c. of diluted (1:10) normal serum obtained from the ear-vein of a rabbit, which acts as complement. The test-tubes are placed in the incubator for half an hour with several controls, and then mixed with agar and poured into Petri dishes. After twenty-four hours the degree of bactericidal action can be easily determined by noticing in which plate a development of typhoid germs still goes on. The same method must be repeated with the two forms of paratyphoid germs. The bactericidal test is not always positive even in cases of typhoid where the germ has been isolated from the blood; positive results are, however, more frequent than with the agglutination test. The earliest period during which the germs were killed by typhoid serum was the eighth day. One great drawback of the method, according to KLAUBENHEIMER (*Zeitsch. f. klin. Med.*, Vol. 56, Nos. 1 and 2), is the amount of time and apparatus necessary; thus, for a single case, no less than 35 agar-plates are required.

The Physiological Differentiation of Pneumococcus and Streptococcus.—It is impossible, by current cultural methods and by morphological examination, to clearly differentiate between pneumococci and streptococci, according to P. H. HISS, JR. (*Jour. of Exper. Med.*, February 4, 1905). Well-marked capsules may occur on organisms which have with reason been classified as streptococci. The author's experiments show well-marked differences between the metabolic activities of pneumococci and streptococci, which may prove useful in the differentiation of these organisms. These differences become apparent when the pneumococci and streptococci are cultivated in an alkaline serum medium, or in a serum medium to which the carbohydrate inulin has been added. Pneumococci slowly produce acid in the alkaline serum. They ferment the inulin and thus rapidly give rise to acid. Streptococci do not form appreciable acid in either of these media, nor do they ferment the inulin. The penumococci coagulate the serum of these media while the streptococci do not. Starch and glycogen media are coagulated by pneumococci and by some at least of the streptococci. Lactose, saccharose, and maltose are fermented by pneumococci with the production of acid. Certain members of the *Streptococcus pyogenes* also ferment these disaccharids. In serum media, especially starch-bouillon serum, sterilized at 68° C., pneumococci usually develop well-marked capsules. In some of the serum media streptococcus cultures may at times have demonstrated capsules. All the streptococci classified as streptococci have been found to possess capsules. The same stains are applicable to the demonstration of pneumococcus capsules.

Cause of Carcinoma.—An interesting review is given by E. COHN (*Zeitsch. f. klin. Med.*, Vol. 56, Nos. 1 and 2) of the various forms of protozoa that have been held responsible for malignant growths at one time or another. The lowest organism described in this connection is an ameba, the *Leydenia gemmipara*, but it has been shown since then that an ordinary body cell may closely simulate all the details in the structure of an ameba. An ameboid stage is also found in the life-cycle of another subdivision of the rhizopoda, the *mycetozoa*, and one particular form, the *Plasmodiophora braissica*, has frequently been mentioned in connection with cancer. The next class, the *Magistophora*, are only known as parasites of the blood (especially in cattle), but attention has been frequently directed to the sporozoa in that they are preeminently parasites of the epithelial cell. Their life-cycle is very complicated and they have been frequently encountered in various tissues of the higher animals. It is true that certain cells in carcinomatous tissues closely resemble certain phases in the development of these parasites, but absolute proof is lacking, since we do not possess any methods for cultivating them outside of the body. More recently still, various forms of pathogenic yeasts have been described in carcinomatous tissues, but these are most likely artefacts or secondary infections, since most attemps at inoculation have been unsuccessful. There are a few diseases undoubtedly caused by yeasts (*Blastomycosis cutis*, the lymphangitis epizootica of horses, etc.), but these bear no resemblance whatever to carcinoma. All in all, the parasitic theory of malignant growths rests on insufficient evidence, especially since it has been shown that Plimmer's bodies, and other structures supposed to be characteristic of lower forms of life, are nothing but vacuales in the protoplasm formed during a peculiar process of degeneration.

NEUROLOGY AND PSYCHIATRY.

The Epileptic Criminal: With Report of Two Cases.—T. H. EVANS (*Med. Rec.*, February 25, 1905) gives the histories on an epileptic who, in a period of depression, committed a murder, and a woman belonging to the borderland epileptic type who, in an access of jealousy, attempted to kill her lover. Taking these instances as a text the author concludes that (1) The essence of crime, is in the intention, and the ability not so to intend. (2) No punishment is adequate to any crime; restraint not only after a crime has been committed, but effort to hinder any such deed, is preferable always. (3) The victims of epileptics ought to have legal ground for suit against the community as well as those in charge of the epileptic. (4) Reservations ought to be established in which degenerates and the morally irresponsible could be colonized and treated, allowing all possible freedom of initiative for useful and safe pursuits therein. (5) Marriage of neurotics should be regulated. We can afford to lose the few sane descendants if we could also cut out their degenerate progeny. Democratic principles encourage, in this as in other matters, the average, and discourage the exceptional or abnormal—great or small. (6) All epileptics are to be viewed with suspicion. Many cases of psychic erraticism, cranks, and mistaken reformers, are to be taken as examples of epileptic psychic equivalents. The major forms of epilepsy may not prove so dangerous to the community as these veiled manifestations.

Prognostic Value of the Formula of Leucocytes Found in the Cerebrospinal Fluid.—The histological examination of the cerebrospinal fluid is an easy method, according to GOGGIA (*Gazz. deg. Osped.*, January 29, 1905), and if the formula of the cells found in condition of disease is correct, it gives an extremely valuable method of diagnosis. In cases

of acute meningitis due to the pneumococcus, meningococcus, and streptococcus, polynuclear leucocytes are in evidence and in the majority, especially in the fatal cases, while in the curable cases the polynuclear leucocytes are gradually replaced by the mononuclear elements. This fact is emphasized by the recent French writers. The author urges that this must not be confused with the lymphocytosis of the cases of tuberculous meningitis. In two adult patients suffering from acute meningitis one recovered and one died. They were both treated by Quincke's puncture of the cerebrospinal canal for therapeutic purposes. The daily microscopical examination of the fluid demonstrated the following facts: (1) The constant predominance of small mononuclear cells in the patient who died, in whom the diagnosis was confined by autopsy. (2) The constant presence of polynuclear elements even in the early days of convalescence of the patient who survived. The writer believes that the various observations on this subject make the formula of the French school very exact. But one must remember that the prevalence of lymphouytes in the cerebrospinal fluid is not a positive evidence of tuberculous meningitis, for polynuclear leucocytes may also be seen in abundance, and indicates that the proportion of leucocytes does not alone contribute a sure guide for prognosis and diagnosis.

Peripheral Facial Paralysis.—Seven cases of this affection were described and illustrated by PALESE (*Gazz. deg. Osped.*, November 15, 1904), demonstrating a certain family heredity, which makes it possible to speak of a true family type of the disease not dependent on cold for a cause. Charcot described three such cases. Concerning prognosis the presence or absence of pain does not modify the course. One case of facial paralysis, without being preceded or followed by pain, lasted eleven months without being cured.

Researches in Dementia Præcox.—A. D. ORMEA and F. MAGGIOTTO (*Gazz. deg. Osped.*, January 22, 1905) report the following observations on the urine of cases of dementia præcox. They believe a definite relation may be established between the limination of methylene blue and the clinical symptoms of depression and excitement. They arrive at the following conclusions: (1) In dementia præcox there is a special and characteristic alteration of the process of excretion, which shows (*a*) by means of the elimination of methylene blue through the kidneys, which begins and reaches its maximum intensity with great delay and is prolonged far beyond the time customary in normal individuals; (*b*) by the character and composition of the urine, in which the total quantity is diminished and the specific gravity is reduced; with a great reduction of urea, uric acid, phosphates, sulphates, nitrogen, and total acidity, with a slight increase of chlorides. (2) The elimination of methylene blue in other psychoret, manic-depressive insanity, hysteria, phrenasthenia, melancholia, of involution and dementia paralytica, is always more rapid than in normal individuals. (3) These types of mental disease do not show the same variation in the urine corresponding to the symptoms of depression and excitement. (4) These observations suggest that dementia præcox is an idiopathic form of disease, quite distinct from other kinds of psychoses, and based on the alteration of the excreted materials, probably produced by the blood vessels in the sexual organs—resulting eventually in a systemic and partial degeneration of the brain. (5) The elimination of methylene blue in this characteristic way shown in dementia præcox can be used to diagnose this disease.

PEDIATRICS.

A Case of Noma Cured by Means of Red Rays.—Another triumph of phototherapy is recorded in the successful treatment of that dread malady, cancrum iris, by W. O. MOTSHAN (*Arch. f. Kinderheilk.*, Vol. 40 Nos. 4 to 6). The patient was a nine-year-old boy, who after having passed successively through scarlatina, varicella and measles, developed noma of one cheek, which went on to perforation. Immediately upon the admission of the case to the hospital, the local use of red rays by means of a 16-candle-power incandescent lamp with a red globe, was resorted to. The wound alone was exposed to the rays. The results of this treatment were soon apparent. On the third day pain disappeared. Seven days later the anterior half of the wound was filled with granulations. The necrotic areas gradually diminished. Two months later the patient was presented before the Pedriatic Society of St. Petersburg, entirely cured.

Treatment of Gastro-enteritis with Buttermilk.—During a severe epidemic of gastro-enteritis and of cholera-infantum in the north of France, buttermilk was largely employed as a medicament. The conclusions which have been drawn by Dr. Floquet from the results of his experiences are reported by E. DECHERF (*Arch. de Méd. des Enfants* (January, 1905) as follows: Buttermilk is generally well taken by infants, who prefer it to sweetened boiled water. Its use was followed by good results, while in parallel cases, treated by other means, no improvement was observed. while acting in these cases as a specific, buttermilk is also a food and causes an increase in weight. It is indicated in both chronic and acute cases. It produces excellent results in rickets; it combats the intestinal fermentations which give rise to chronic auto-infection. Some practitioners have administered the buttermilk raw, but the majority who have used it prefer to give it boiled. The following is the method of preparing the buttermilk: One tablespoonful of farina to a liter of buttermilk, which is then slowly boiled in an enamelled or porcelain vessel, at the same time that it is constantly stirred. The mixture is kept boiling for several minutes, at the end of which 75 grams of sugar are added. It is then ready to be fed to the infant, either in the bottle or with the spoon or cup. In cases of either acute or chronic gastro-enteritis, it is given in the same doses as milk, every three hours. In the beginning it is best to give it in fractional doses of a tablespoonful every fifteen minutes. Although during the first few days the child may vomit after taking the buttermilk, the stomach soon gets used to this acid food. In children over a year old, sometimes large doses are necessary. The good effects of buttermilk are to be attributed to the large amount of lactic acid present, which counteracts intestinal fermentation. The small amount of fat contained, and the fine division of the casein, thanks to churning, render the preparation very digestible.

Incontinence of Feces in Children.—Three instances of this rather rare condition, of which only about a dozen cases are on record, are reported by M. OSTHEIMER (*Univ. Penn. Med. Bull.*, February, 1905) as occurring in boys ranging from four and a half to ten years. In one case the incontinence had followed diphtheria and scarlet fever and persisted for two years. In six months upon nutritious

food, tonics, and fresh air, he made a complete recovery. The other two boys were otherwise well, with the exception of a general nervousness in one of them. The latter after a time also developed paroxysms of pain with micturition, and often passed bloody urine. After removal of a vesical calculus, he became perfectly well. The author found the best results attended the administration of strychnine and atropine, up to one-tenth of a grain of each daily. Relapses are common and must always be treated in the same manner. Tonics and good food, together with plenty of fresh air, are very important.

Standardized Gruels.—H. D. CHAPIN (*Med. Rec.*, February 18, 1905) says that with the increased knowledge that has resulted from a careful study of the use of gruels in infant feeding it has become recognized that they have other values than as attenuants of the curd of the cow's milk. They may often be employed to economize the enery of the body that is being used in the effort to prepare food for assimilation, and by taking advantage of this fact it is frequently possible to keep the body well nourished on a quantity of food much smaller than is theoretically indicated. It is highly desirable, therefore, that there should be some uniform standards for use in preparing gruels, and that their food values and possibilities should become better known. With this object in view the author had made gruels containing varying amounts of pearl barley, prepared barley flour, wheat flour, and rolled or flaked oats, which were then assayed to determine their composition in order to show the relative properties of tissue-building and heat and energy producing elements. The tables obtained are reproduced, as well as others showing simple methods of preparing gruels of any desired strength.

Fresh Cold Air Treatment of Pneumonia in Infants.—W. P. NORTHRUP (*Med. Rec.*, February 18, 1905) reports two cases of pneumonia in infants in which the windows of the sickroom were kept open day and night; both children recovered. He believes it will become more and more the rule to treat pneumonia in this way. Cool, pure air, he says, reddens the blood, stimulates the heart, improves digestion, quiets restlessness, and aids in overcoming toxemia. He concludes with the following prescription for killing a baby with pneumonia: Crib in far corner of room with canopy over it. Steam kettle; gas stove (leaky tubing); room at 80° F. Many gas jets burning. Friends in the room, also the pug dog. Chest tightly enveloped in waistcoat poultice. If child's temperature is 105° F. make a poultice thick, hot, and tight. Blanket the windows, shut the doors. If these do not do it, give coal-tar antipyretics and wait.

PRESCRIPTION HINTS.

Early Treatment of Consumption.—The therapeutic arsenal for the treatment of pulmonary tuberculosis is well stocked, and even overstocked, remarks Prof. Renon. Neither the tuberculin of Koch nor the new tuberculin T.R. have given decisive results. The same may be said of the series of serums recommended by men of good faith and of undeniable scientific standing.

One of the best remedies to be utilized in phthisis is arsenic. It may be given in very small doses:

℞ Arsenate of soda..... 1 gr.
Water.....10 oz.

A tablespoonful twice a day at meals, and continued twenty days a month for three or four months. There are other preparations of arsenic, such as cacodylate of soda and arrhenal. The former is employed by the mouth, the rectum or subcutaneously. M. Renon prefers the latter mode. He injects one grain dissolved in twenty drops of sterilized water every two days, or eight injections in sixteen days. He then suspends them for eight days and recommences the series. Arrhenal may be employed in the place of cacodylate of soda, but M. Renon thinks it inferior. The *raison d'etre* of the arsenical treatment is to keep the patient in good condition and increase his weight if possible, but it should be used with prudence, especial care being taken to avoid even the semblance of any gastro-intestinal disturbance, as such would act prejudicially in the matter of feeding the patient.

Creosote was considered a kind of specific for phthisis for many years, but it frequently aggravates the condition of the patient by fatiguing the stomach, and, on the other hand, it has frequently provoked hemoptysis. In certain torpid forms of phthisis, however, creosote might be given by the rectum in twenty to thirty drop doses. Synthetic preparations, such as guaiacol or thiocol, they replace creosote. Thiocol given in 10-grain wafers three times a day has much benefited some patients.

Besides creosote, and acting in a different manner, is urea, utilized first by Harper in England, which has a favorable action in all forms of tuberculosis. It can be employed in subcutaneous injections and by the mouth. Prof. Renon gives it in wafers containing 12 grains each, two to four daily. Tannin is also an excellent preparation, but, unfortunately, this is ill tolerated by the stomach. It is best given in the form of wafers:

℞ Tannin ..... 5 grs.
Phosphate of line.....10 grs.

For one wafer; five daily.

Tannigen is a good substitute in the dose of 4 grains three times a day. The glycerophosphates have a good action on the general nutrition. Two or three 5-grain doses daily before meals. Lately M. Renon has been employing with much benefit a new phosphated substance called phyline, described by Posternak, which is a phospho-organic principle of vegetable grains. It is well tolerated, improves the appetite, and favors sleep. He gives 10 grains of it before the two principal repasts.

One of the complications of pulmonary consumption is fever. For this rest in bed will frequently be sufficient. Otherwise antithermics must be given. Of these there are a host, but those which have given the best results are aspirin and cryogenin, discovered by Lumière, of Lyons. Either of these agents may be given in four-grain doses twice a day, at three o'clock in the afternoon and at six o'clock.

Two other symptoms frequently require attention—hemoptysis and diarrhea. The former will be treated by the classical remedies, needless to mention. The diarrhea is best treated with:

℞ Cotoin .....2 grs.

For one wafer; two daily, or,

℞ Methylene blue .....2 grs.
Lactose .....4 grs.

For one wafer; two daily.

For the cough M. Renon recommends a half grain of opium two or three times a day.

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THE RATIONAL BASIS OF NARCOSIS.

THE greatest triumph in the physician's art is his almost absolute control over pain. Yet numerous and varied as are the means at his disposal for putting to sleep the sensory cells of the brain, his practice in this respect has not yet passed beyond the stage of empiricism. To say that these drugs inhibit vital activity is merely to restate the problem in different language.

If one review the vast list of narcotics from ether and morphine to chloretone and veronal, the thought is aroused that possibly all of these drugs have some physical or chemical characteristic in common. The discovery of this common principle would not only simplify but would also impart scientific distinction to the treatment of pain. A glance at the recent literature concerned with the experimental pharmacology of narcosis reveals that Science has begun to grapple ably with a problem worthy of its steel.

A year ago, we referred editorially to the novel theory propounded by Wedensky, who regards narcosis as a stage of vital activity. There are four stages of the latter, namely, rest, activity, inhibition or narcosis, and death. The same physical or chemical stimulus may, according to the strength or duration of its action, give rise to any one of these stages, or may even produce them all successively. As an example, ether first stimulates the ganglion cells of the brain, then causes inhibition or narcosis, and if the action is too intense or too prolonged, causes death. The same sequence of events is true of nearly all other narcotics and of most poisons. This theory suggests that possibly the real explanation of narcotic action will be found in the physiology of the nerve-cells.

Most of the investigations on narcosis have been concerned mainly with the chemical aspects of this problem. S. Baglioni studied a group of compounds related to phenol, including benzyl-alcohol, benzaldehyde, acetophone, and benzoic acid. These are all built up from a benzol-nucleus to which a methyl side-chain is attached. The latter is easily oxidized to CO_2H. The more oxygen present in the side-chain, the less is the narcotic effect. Thus, benzyl-alcohol is a powerful depressant, while still less so is benzaldehyde, and least of all is benzoic acid. Baglioni concluded that the narcotic power of these substances depends upon their ability to draw oxygen out of the protoplasm of the nerve-centers,—in other words, upon their power of reduction. There are other facts which tend to support the view that if the tissues are deprived of oxygen, narcosis results. Asphyxia results in unconsciousness. C. A. Herter found that ether, chloroform, and chloral diminish the reducing capacity of the tissues. They thus impair the ability of the tissues to reduce the oxyhemoglobin of the red blood cells, with the result that oxygen-starvation occurs. The narcotic effect of cold may be explained in the basis of the further discovery made by Herter, namely, that cold diminishes the reducing power of the tissues.

A. Jolles has found that the reduction of oxyhemoglobin is brought about by means of a special ferment, katalase, and that the amount of this ferment in the blood is diminished in comatose conditions. He suggests that the symptoms here are in great part due to insufficient supply of oxygen in the nervous centers. Moore and Roaf have found that chloroform and other anesthetics form compounds with hemoglobin and serum-proteid; they hence limit the physiological activity of the hemoglobin. All the above results lead to one conclusion, namely, narcosis and oxygen-starvation are identical.

Of closely related interest are the researches recorded by P. Bergell and R. Pschorr. These

investigators sought to determine to what extent the action of morphine may be explained by means of the substance from which it is derived, phenanthrene, and its derivatives. Phenanthrene is a cyclic hydrocarbon having the symbol $C_{14}H_{10}$, and is in itself quite inert. But oxy-phenanthrene or phenanthrol produces tetanic seizures. The derivatives of phenanthrene equinone show a decided power of forming methemoglobin; likewise episin, a methyl derivative of phenanthrene, also produces methemoglobinemia. The above observers believe that there is evidently some connection between the narcotic manifestations of morphine and the methemogbinemia produced by some of its derivatives.

Within recent years attempts have been made to explain narcosis upon the basis of physical rather than chemical action. A. R. Cushny, one of the ablest defenders of the physical theory, refers to the experiments of Kionka, who found that although CH_4 has no narcotic action, CH_3Cl has some effect, the Cl being evidently responsible for this activity. Yet while $CHCl_3$ is four times more powerful than CH_3Cl, CCl_4 instead of being still more powerful, is only half as depressing as $CHCl_3$. Kionka concluded that the depressing qualities of this series are not determined by their molecular structure, but by some physical characteristic which is present in most of this group.

It is hardly necessary to recall the theory proposed three years ago by A. P. Matthews, that chloroform and ether owe their narcotic power to the fact that they dissolve the fatty constituents of the nerve-cells. Closely related to this is the theory advanced by Overton, that the ease with which narcotics pass into the cells is dependent upon the degree of their solubility in the lipoids (fat, cholesterin, lecithin), contained in the cell-wall. Overton and Meyer found that the good narcotics, anesthetics and antipyretics have a high osmotic power. J. Traube finds that there is a close relationship between surface-tension and narcotic power. He found by experiment that if two liquids are separated by a membrane, such that the surface-tension of one is less than that of the other, the former will osmose into the latter. He attributes the ease with which narcotics penetrate the walls of the ganglion-cells of the brain, to the fact that the narcotics have a remarkably low surface-tension. He also distinguishes between two classes of narcotics,—the toxic and the non-toxic. The latter dissolve in the lipoids without uniting with or decomposing the proteids or other substances of the cell. The other class includes the toxic narcotics,—nicotin, allyl-alcohol, pyridin, anilin, phenol, acetaldoxim, and methyl-acetate, whose toxicity is attributed to the fact that they enter into chemical combination with some of the cellular constituents. All other narcotics partake to a slight extent of this toxicity.

HOSPITAL EXAMINATIONS AND MEDICAL TEACHING.

FOURTH-YEAR medical students are now approaching a turning-point in their lives. During the coming month competitive examinations will be held by the hospitals of New York to determine who shall be granted the inestimable privilege of serving as internes in these institutions. Men who entered medical school calmly, almost thoughtlessly, tremble as the time approaches for leaving it; for no one knows better than they how inadequate is the instruction which has been imparted to them, if it be regarded as a final preparation for professional practice. This instruction is not a completed edifice; it is a mere assemblage of building materials—valuable if ultimately cemented together by clinical experience, but little more than useless rubbish if not supplemented by the binding power of knowledge gained at the bedside.

With the annual hospital examinations, class distinctions appear where none should exist; to a favored few is granted as a precious privilege that which all should receive as a right. Next fall we shall read in the college catalogue the proud statement that "50 per cent. of the members of the class of 1905 received hospital appointments"—a good recommendation for a "quiz" class, perhaps, but a sorry confession for a supposedly great and representative seat of professional learning. Where, may be asked, will the remaining 50 per cent. acquire that clinical knowledge which is indispensable to one who is to undertake to practice independently the art of medicine? Some will ruthlessly trample over the bodies of poor and helpless victims, and thus at last will escape from the mazes of their enlightened ignorance and attain real proficiency. Others, beginning with deeply rooted misconceptions, are doomed to perpetual blunders which will cost the public dear. A third group, affrighted at the dangers that beset them, will quickly abandon medicine for some less difficult field.

It is not to be wondered at that the "regular" school of medicine does not monopolize public confidence. With all its vaunted superiority of scientific attainment a great many of its followers are wretchedly trained. Medical schools vie with each other in building and equipping laboratories where a few research scholars may carry on investigations in bacteriology, chemistry or pathology; but the hospital is the laboratory which is needed most, and the "college hospital" is not a feature of the equipment of the medical schools of New York.

Shall appeals again be made to the charitable hospitals of the city to open their doors to undergraduate medical students? Again and again such appeals have been rejected, though its advocates were leaders and teachers of wide renown and influence; and to-day there is no new force within the hospitals themselves to set aside the objections which repeatedly have been brought forward. Yet medical schools must do their duty. Somehow, somewhere, they *must* find the means to build their own hospitals; and when built, these hospitals must be so conducted as to win the unqualified favor of the benevolent public. Let us have but one notable demonstration of the worth of such an institution, and the permanent and general success of the movement will be assured. If but a small fraction of the annual income of existing institutions is once diverted to the training of a college hospital, other hospitals will soon fall into line, and New York will be fairly launched on the path to preeminence in medical science and teaching. It is our prayer that the beginning may soon be made.

THE DYSENTERY BACILLUS.

THERE is perhaps no micro-organism, not even excepting the meningococcus, which became notorious in 1902 and 1903 through the polemics of Albrecht and Ghon, which has given rise to so much dispute within recent times as has the so-called dysentery bacillus.

The title to this discovery, its biological and cultural peculiarities, its agglutinative reactions, its pathogenicity, its unity, have successively been the subject of such violent dispute that it has seemed to many workers as if light could never come out of such confusion worse confounded. The identification of the dysentery bacillus in the summer diarrheas of children and in other native enteric diseases, while it emphasizes the extreme importance of the organism as a factor in the every-day experience of the working physician, only served to complicate the difficulties of the initial problem.

It was suspected even by the earlier investigators, notably Kruse, that the organisms isolated under these various conditions, namely from the patients suffering with epidemic dysentery in the Philippines by Flexner, and from similar cases in Japan by Shiga, were of a different type from those found, for example, in the epidemics of dysentery in the insane asylums of Germany. With the method employed by them, however, it was quite impossible to formulate these differences in definite terms of biological and cultural expression. Only by means of the more exact criteria offered by the fermentation tests and the agglutination methods, has it become practicable to differentiate these various organisms with any degree of facility and certainty.

Perhaps the most impartial review of the entire literature, and the most thoroughgoing comparative investigation extant of the various types of so-called dysentery bacillus is to be found in a recent article by Prof. Hiss, in the *Journal of Medical Research*. In his fermentation studies, he made use of dextrose, maltose, saccharose, dextrin, and mannite, dissolved in various media, such as serum water, pepton water, pepton asparagin, and so forth. In all of these tests, the degree of acid production, if any, and the rapidity of its production, was the point to be determined. As a result of these experiments, it was found that all the organisms might be divided into two groups, namely those which do not ferment mannite with acid production, and those which produce acid from mannite. The first group contains the *Bacillus dysenteriæ* of Kruse and Shiga; the second group, all the other forms.

Further tests of all these organisms were made by means of careful comparison of the quantitative agglutination reactions in immune sera, and of the absorption of agglutinins.

These tests developed the fact that the agglutinins produced in the serum of animals inoculated with representations of the various groups are probably distinct and specific, thus supporting the classification indicated by the differences in fermentative activity.

The important question to determine is the actual relationship of these organisms to the diseases in which they are found to occur. That there is not necessarily an etiological relation-

ship goes without saying. The changes in the chemical reaction and constitution of the intestinal juices which accompany all forms of enteritis might conceivably be the factor at work in the alteration of the bacterial flora. The potency of this factor is best illustrated by the marked changes which accompany the substitution of cow's milk for mother's milk in nurslings; the Gram-positive bacilli which had almost usurped the microscopic field under the previous conditions are practically substituted by Gram negative forms. As is conservatively stated by Hiss: "What the etiological significance of these various organisms is has not as yet been satisfactorily determined. So far as their occurrence in abundance in the digestive tract, coincident with the development of certain inflammatory conditions and the increase of apparently specific agglutinins in the blood of the patient, goes, they all at present, it seems, have an equal claim to be looked upon as possible inciters of dysenteric and diarrheic diseases. Whether one or all, or indeed any of them, will continue to hold this claim only further observation and experimentation can determine."

ECHOES AND NEWS.

NEW YORK.

Medical Ethics.—Two lectures on the above subject will be delivered by Dr. A. Brayton Ball at the College of Physicians and Surgeons, March 22 and 29, at 5 P.M. This follows out an old system that was discontinued for a couple of years and is to be taken up again, as decided upon at a recent meeting of the Faculty. Dr. Ball's lectures have always been of great interest to the students.

The Charaka Club and Dr. Osler.—Last Saturday, at the invitation of Dr. C. L. Dana, the president, the Charaka Club, of New York, known largely for its interest in medical, historical and literary pursuits, gave a farewell dinner to Dr. William Osler, one of its own members. The dinner at the University Club was a great success. Next week the MEDICAL NEWS will present a summary of the evening's proceedings.

New York Academy of Medicine. Section of Laryngology.—A meeting of this Section will be held March 17 at 8.15 P.M., in honor of the one hundredth birthday of Signor Manuel Garcia. The following is the interesting program: (1) Manuel Garcia: Teacher, Discoverer and Man, by James E. Newcomb, M.D.; (2) Address, by Walter Damrosch, Esq.; (3) "The Future of the Laryngoscope and the Study of Laryngology," by John N. Mackenzie, M.D., of Baltimore.

To Study Meningitis.—The Board of Health has empowered Commissioner Darlington to ask the Board of Estimate and Apportionment for a small sum to pay a commission to investigate the matter and try to find some remedy to retard, or, if possible, to stamp out the disease. The Commissioner said that the disease could be conveyed by contact, as it is a germ disease, but though many patients had been sent to hospitals he had never heard of a case being contracted in a hospital. In January, 1904, there were twenty-five deaths, while in the same month this year there were 107. In February, 1904, there were twenty-six deaths, while in February, 1905, there were 149. There have been printed 2,700,000 pasters, which will be placed in all school text-books warning scholars against spitting on sidewalks and floors of public places.

PHILADELPHIA.

Charitable Bequests.—Two institutions, the Women's Home Mission Society of the M. E. Church and the Maternity Hospital, will each receive $200 according to the will of Margaret Frank, late of 4324 Westminster Avenue, Philadelphia.

Spinal Cord Sutured.—This operation was performed at the Medico-Chirurgical Hospital March 4, 1905; the following day the patient was doing well, and it is thought that he, Edward Farrel, will recover, although there seems to be some doubt whether the paralysis in the leg will disappear.

Meeting of Philadelphia Obstetrical Society.—At the meeting of this society, held March 2, Dr. W. R. Nicholson read a paper on "The Indications for Slow Methods of Inducing Labor." Dr. George M. Boyd spoke of "Accouchement Forcé." Dr. Richard Morris read a paper on "The Slow Methods of Inducing Labor," and Dr. Barton Cooke Hirst on "The Methods of Inducing Labor."

Election of Officers.—The Auxiliary II of Free Hospital for Poor Consumptives, which was organized December 8, 1904, with a membership of thirty-one, and which now has a membership of seventy-nine, elected Miss Anna Morris, chairman; Mrs. Talcott Williams and Mrs. M. P. Ravenel, vice-chairman; Mrs. C. J. Hatfield, secretary; Mrs. D. L. Edsall, treasurer. Before the election they listened to a lecture on the future plans of the organization by Dr. Talcott Williams.

Hospital Reports.—The following statements have been issued by some of the hospitals of Philadelphia:

Name of Hospital.	Patients Admitted in Feb.	Patients Discharged in Feb.	Patients remaining Mar. 1.	Patients Treated in Dispensary.
Presbyterian	185	173	215	1,709
Germantown	109	114	85	1,132
Women's Homeopathic	91	65	52	971
Howard	39			572

The Charity Hospital treated 273 medical cases, 258 surgical, 26 eye cases, 59 ear, nose and throat, and 165 cases of diseases of women and children.

New Measure to Prevent the Spread of Infectious Diseases.—For the bill recently introduced by Senator Gransback he has now substituted a new one which not only gives to the authorities the power to make rules for the care and control of persons suffering with acute infectious diseases, but also gives them power to govern the sanitary control of the premises where such diseases exist. The bill also empowers the authorities to make rules governing the burial of bodies having died of acute infectious diseases, and it fixes fines and penalties for violating any rule made. It stipulates that the rules shall cover the following: (1) Reports from physicians; (2) Quarantining and disinfecting; (3) Treatment of infected bedding, clothing, etc.; (4) Care and burial

of the dead in cases of contagious diseases; (5) Disinfection of conveyances; (6) Governing the admission and attendance of persons at public or private schools, asylums, hospitals, and compulsory vaccination and revaccination.

Philadelphia Neurological Society.—This society met February 28. Dr. J. D. McCarthy presented "A Case of Tuberculosis with Graves' Syndrome." In discussing the case he said about five per cent. of the advanced cases of tuberculosis present von Graefe's symptom. Dr. Pemberton presented for Dr. Spiller "A Case of Lumbo-thoracic Syringomyelia." The condition began with weakness of the legs, difficulty in walking and alteration in her menstrual functions. On the right side the tendon reflexes are lost, ankle clonus is marked and the Babinski reflex is present; heat and pain sense is lost. Dr. Spiller then exhibited "A Case of Progressive Muscular Dystrophy with Atrophy of the Bone;" "A Case of Tabetic Facial Palsy;" "A Case of Chronic Mercurial Poisoning." Of the first case Dr. Spiller said the condition began about the second year of life, it came on gradually and the patient has never had any pain. There is a marked diminution in the size of the muscles of the left side and the size of the bones of the same side are much decreased. The second presented a marked Argyll-Robertson pupil and a weakening of the left side of the face and the paralysis on the right side. The patient who was presented as the third case works in a hat factory where mercury is used, and the dust with which the atmosphere of the room is laden is constantly being inhaled. The man presents a tremor which by use of the part becomes exaggerated. In discussing this case Dr. Dercum called attention to the difference of the symptom complex produced in mercurial poisoning when it is inhaled and when it is introduced into the system either by the mouth or hypodermically. Dr. Weisenberg showed two patients. "A Case of Hemorrhage in the Pons;" "A Case of Hemorrhage in the Floor of the Aqueduct of Sylvius." Of the first case he informed the society that both external recti muscles of the eye are paralyzed but the eye-grounds are normal; the knee-jerks are exaggerated but there is a chilly feeling constantly running up and down the left leg and a feeling of pricking of pins and needles in the left arm. He found anesthesia of the tissues supplied by the upper branch of the fifth and hypolgia of the tissues of the middle one. In the second case ptosis came on very suddenly; he finds that all the muscles of the eye except the external recti are paralyzed. Dr. Geo. E. Price reported "A Case of Malaria Infection Presenting Symptoms of Multiple Neuritis." The patient of whom he spoke had malaria eighteen months before he saw her. When she came under his care there was numbness of the right leg, the reflexes were weak, and in walking she dragged her feet. Microscopical examination of the blood revealed the estevo-autumnal parasite. Dr. Alfred Gordon read a paper on "Clinical and Pathological Report of a Case of Lead Poisoning with Remarks on the Pathogenesis of the Disease." The case presented all the clinical symptom of the disease. He found the cells of the anterior cornua involved and degeneration in the anterior columns, posterior roots and posterior columns. These changes were most marked in the lumbar region, but the columns of the cervical cord were involved. He infers from his studies that the changes in the reflexes does not depend upon the alterations in the posterior roots alone. He also states that lead has no selective affinity for a special structure and that all elements of the nervous system are simultaneously affected by the lead. He does not believe that the changes in the blood vessels alone can account for the lesions produced.

College of Physicians of Philadelphia.—This society met March 1. Dr. Robert H. Willson reported a number of cases of uremia in which the symptoms had been materially ameliorated by the withdrawal of cerebrospinal fluid. In some cases the procedure failed, in others the relief was prompt and most gratifying. In the discussion Dr. William E. Hughes, in whose wards at the Philadelphia Hospital the work was done, referred to two cases in private practice, in neither of which had any noteworthy benefit resulted. In one case there was reason to believe that the puncture wounded a vessel and led to a hemorrhage around the cord. Dr. James Tyson expressed a willingness to try the method but thought it did not seem to promise more than venesection with hypodermoclysis or saline transfusion. Dr. W. M. L. Koplin referred to the recent work of Krönig and others on the value of lumbar puncture in the treatment of eclampsia, in which condition it had been taught to be of benefit to cases of markedly elevated cerebrospinal tension. He expressed the one in which the symptoms depended upon heightened tension while in the other group there was present in the cerebrospinal fluid an excess of one or more of its normal constituents, or the presence in noxious quantities of one or more abnormal bodies upon the action of which the symptomatology of the condition in question depended. He referred to a number of French observers who have shown that in certain cases of Bright's disease the cerebrospinal fluid contains an excess of urea and while it is not probable that this substance alone was responsible for the symptoms it might be an index to the presence of other poisons for which there are no accurate tests. Dr. T. L. Coley gave an interesting review of "The Famous Controversy Concerning the Internal Use of Cantharides—an Historic Sketch." Dr. Alfred C. Wood reported "Removal of Gall-stone by Operation which Obstructed the Intestine." He relieved the obstruction by opening the intestines and excising the stone, at the same operation he removed a concretion from the gall-bladder. So far as he is able to find, his was the first case in which simultaneous removal of the obstructing calculus within the intestine and also a second calculus in the biliary passages, had been practised. Dr. John B. Roberts read a paper on "The Gardener's Spade Deformity and the Silver Fork Deformity in the Fractures of the Carpal End of the Radius." He called particular attention to fractures in this locality in which the lower end of the fragment is displaced toward the palmar aspect of the arm, giving rise to a special contour which he designates "The Gardener's Spade Deformity."

Philadelphia Academy of Surgery.—The meeting of this society was held March 6. Dr. John Gibbon read a paper on "The Matas Operation for the Cure of Aneurism," showing a case. He informed the society that this operation was done within the sac and did not interfere with the anastomosis. In this case he found that the aneurism extended under the gastrocnemius muscle and that of the opening of the artery into the sac and the outlet were very close together. He opened the sac, after applying a tourniquet, closed both openings of the artery

with chromicized catgut, then pulled in the sac by double row of sutures. His case became infected and he noted that many of the cases reported were similarly affected. Dr. William J. Taylor read a paper on "Varicose Veins Simulating Femoral Hernia. Operation: Death from Heart Clot, Believed to be due to Chronic Gastric Ulcer." The mass in the femoral region presented an impulse upon coughing and disappeared when the patient was placed in the recumbent position. At the operation when he exposed the mass he found he was dealing with a dilated vein, which he ligated above and below the dilatation and then sutured the sac. Sometime later the patient began to complain of distressing symptoms in the gastric region which were attributed to gastric ulcer. About a month after the operation the patient died suddenly, and at post mortem there was a clot in the heart, a hemorrhagic pericarditis and old healed gastric ulcers. Dr. Mitchell exhibited a stomach upon which he operated for perforating gastric ulcer, but the patient died from a second perforation. Dr. R. P. Reynolds then read a paper on "Cysts of the Pancreas, with Report of a Case." The diagnosis of these cysts, he said, is not easy. There is usually a history of a slowly growing tumor in the abdomen which is hard, but may fluctuate, and by dilatation of the stomach with gas or air it is found to be retroperitoneal. The presence of sugar in the urine is of little value in diagnosing these cases. If the fluid from the cyst can be obtained and the presence of pancreatic ferment demonstrated the diagnosis at once becomes clear. The cyst in his case filled the greater portion of the peritoneal cavity. He was unable to remove the entire sac. He maintains that the fluid of these cysts will not infect the peritoneum. Dr. Geo. Erety Shoemaker read a paper on "Spindle-Cell Sarcoma of the Ovary, not Yielding to Coley's Fluid nor to X-ray." He first gave a short sketch of one of his cases that was cured by the combined treatment of Coley's fluid and the X-ray. Of the case referred to in the paper he said there was present an inguinal hernia and that the tumor in the abdomen was thought to be a fibroid of the uterus, so both conditions were to be treated at the same operation, but after the operation on the hernia had been completed and the abdomen opened he found the tumor mass involved the uterus, bladder, part of the rectum and the right ovary were not identified. The condition was considered inoperable and the treatment with Coley's and X-rays were instituted but without beneficial results. Dr. W. W. Keen then exhibited an apparatus to maintain the position of the patient during an operation.

CHICAGO.

Visiting Nurses' Report.—At the regular monthly meeting of the Board of Directors of the Visiting Nurses' Association, Miss Harriet Fulmer, Superintendent, reported 963 patients cared for and 4,159 visits made by the nurses. The Association gives special attention to the care of tuberculosis cases in the homes of the poor and to all chronic cases not eligible to hospitals.

Annual Meeting of Stockholders of Chicago Eye, Ear, Nose and Throat College.—At this meeting of the stockholders, the following were re-elected Directors: Drs. Wm. A. Fisher, Adolphus G. Whippern, Thomas Faith, H. W. Woodruff, and John R. Hoffman. Dr. Wm. A. Fisher was re-elected by the Directors as President and Treasurer, while Dr. Adolphus G. Whippern was elected Vice-President, and Dr. John R. Hoffman Secretary.

Columbus Hospital.—A new North Side hospital bearing this name was opened February 26. Addresses were delivered by Dr. John B. Murphy and Judge Theodore Brentano. The institution was dedicated with appropriate ceremony by Archbishop Quigley. The staff of the hospital includes Drs. Gustav Fütterer, Julius H. Hölscher, H. H. Brown, Thomas S. Crowe, Willis G. Storer, A. Biankini, Wm. P. Verity, Randolph Brunson, A. C. Garvy, Harold N. Moyer, David Lieberthal, Frank Byrnes, and John B. Murphy.

Nurses Receive Diplomas.—Twenty nurses received their diplomas at the annual commencement of the Chicago Hospital Training School for Nurses, February 28. Dr. Alexander Hugh Ferguson presented the diplomas. In addition to the regular number, two honorary diplomas were awarded to Miss Martha L. Giltner, Superintendent of Nurses at the school, and to Mrs. Margaret Guerley, of Waukegan. The Rev. John Archibald Morrison and Dr. Alfred C. Crofton spoke. At a banquet at the hospital in the evening, Dr. Alfred S. Henning acted as toastmaster. Responses to toasts were made by Drs. Wm. N. Hardin, Alex. Hugh Ferguson, Alfred C. Crofton, H. W. Gentles, Philip Kreissl, A. McDermid, John T. Binckley and Miss K. Donahue. The graduates were the guests of honor.

Campaign Against Tuberculosis.—Members of the State Legislature are receiving a flood of literature devoted to arguments in support of the passage of Mr. Glackin's bill appropriating $200,000 for the erection of a sanitarium for consumptives. A circular letter was received by members of the two houses from the Illinois State Association for the Prevention of Tuberculosis, with headquarters at Chicago. A large delegation from Chicago and other parts of the State will go to Springfield to urge the passage of the bill. It is argued that statistics show that in 75 per cent. of patients treated in similar institutions the disease is arrested. The enactment of this bill into law will provide the State with an institution, which, in importance, not only to thousands of sufferers, but to people at large, overshadows any other institution. A list of prominent citizens of the State who have endorsed the bill is appended to the circular.

Early Diagnosis of Tuberculosis.—The State Board of Health has just issued for distribution to the physicians of the State, a circular on "The Early Diagnosis of Tuberculosis," which will bring to the physician in concise and systematic form all of the information on the diagnosis of the disease to be obtained from a most exhaustive review of American or foreign medical literature. The great interest in consumption, manifested during the past few years, has resulted in extensive scientific investigation, and the importance of early diagnosis, both in saving the life of the patient and in protecting those with whom he comes in contact, has directed much of this investigation to the earliest reliable signs of the existence of the disease. Unfortunately, much of the most valuable material has not yet found its way into the standard text books and lies hidden away in the pages of the hundreds of medical journals and monographs, unavailable to the busy practitioner. It was especially with a view of placing this later information in the hands of the physician that this circular was prepared. In taking up the newer meth-

ods of diagnosis, however, the utmost care has been taken to eliminate all that is still questionable or speculative, and those signs and symptoms whose value are under discussion were omitted altogether. One subject on which there has been some difference of opinion on the part of medical men, however, is discussed in the circular with considerable emphasis, and that is in regard to advising the patient as to the character of the disease. It is the belief of the State Board of Health that, after the diagnosis is established, the patient should be fully advised of the nature of the disease, what he can reasonably expect in the way of cure, what he must do to bring about the best results, and, far from least important, what he must do to protect those who are about him. According to the circular, "A frank statement of fact is not unkindness, nor will the knowledge act prejudicially to the physical welfare. Withholding this information removes from the patient and the public their greatest safeguard." Attention of the medical men of the State is directed to the laboratory of the State Board of Health at Springfield, and it is announced that examination of sputum of patients supposed to be tuberculous, will be made without cost at any time. The establishment of container stations, for the distribution of mailing cases for specimens, one in each county of the State, is also announced and special attention is drawn to the fact that, wherever consumption is found by physicians to exist in unusual numbers, inspectors will be sent to assist in the investigation of the cause and in taking necessary steps to check its spread. The circular also contains a reproduction from a photograph of the laboratory of the board.

GENERAL.

Association of American Medical Colleges.—By vote of a two-thirds majority of all the colleges voting, it is decided that the next meeting of this association is to be held in Chicago Monday, April 10, 1905. Detailed information as to place of meeting and program will be issued later.

Gift to Westminster Hospital.—The sum of £1,000 has been presented by Mr. Edward Heron-Allen to the Westminster Hospital, London, to endow a bed in one of Dr. Murrell's Wards "in recognition of his valuable contributions to pharmacology and his researches on the action of remedial agents in the treatment of disease."

American Laryngological, Rhinological and Otological Society.—The eleventh annual meeting of this society will be held under the Presidency of Dr. Frederic C. Cobb, at Boston, Mass., on Monday, Tuesday and Wednesday, June 5, 6 and 7, 1905. The profession are cordially invited to attend the meeting and take an active interest in the papers and discussions.

The Prevention of Malaria.—At the request of the Society for the Study of Malaria, the Italian Minister of Public Instruction has sanctioned the distribution among the teachers of evening and holiday schools for illiterate adults of pamphlets containing simple explanations of the mode of origin and spread of the disease, and instructions for the use of the quinine supplied by the State for prophylactic purposes. The object is to secure the cooperation of the teachers in the work of prevention.

Atlantic City Medical Library.—A medical library has been established by the Atlantic City Academy of Medicine and this society has entered into an arrangement with the Atlantic City Free Public Library by which a room has been set apart for its books and periodicals. These will, however, only be given out to members of the Academy and their friends, as it is deemed unwise to allow the public free access to medical books. Physicians visiting Atlantic City will be extended every courtesy the library can offer. Contributions on medical subjects will be gladly received and may be directed to Dr. Wm. Edgar Darnall, President of the Academy, or Dr. Philip Marvel, Chairman of the Committee.

The Supply of Midwives.—The English Association for Promoting the Training and Supply of Midwives held its annual meeting on February 14, when the report of the Council for the year 1904 was presented and adopted. It recorded the acceptance of the position of patroness by Her Majesty the Queen, a fact which was deemed to emphasize the national character of the Association's undertaking, and stated that among the accessions to the Council were the medical officers of health for several counties. Propaganda work throughout the country had been actively carried on, and twenty-three pupil midwives had been trained, the fees of eight being paid for by the Association. In return for free or assisted training the pupils bound themselves to do district midwifery for not less than two years, the Council retaining their certificates meanwhile. Steps were being taken which it was hoped would result in the Educational Authority for London adding lectures for midwives to its technical courses. It was stated that to carry on and extend the work further financial aid from the public would be necessary. The Secretary of the Association is Miss Gill, Dacre House, New Tothill Street, Westminster.

An Ancient Strike.—Last Sunday, states the *British Medical Journal*, the *Observer*, which is printing paragraphs extracted from its issue for the corresponding week a hundred years ago, published the following taken from its issue of Sunday, February 17, 1805: "A dispute has arisen between the physicians and surgeons of Worcester, in consequence of which the former have written to the apothecaries that they shall decline acting as consulting surgeons, and that they *will not* meet the surgeons on medical cases. 'Who shall decide, when doctors disagree?'" We should like to know a little more about this dispute, how it arose, and how it ended. Apparently the question must have been raised by the surgeons, for the notification given by the physicians, although it was evidently intended as a snub to the surgeons, was in effect a self-denying ordinance. It looks as though the surgeons had objected to the physicians being consulted in surgical cases, and that the physicians, feeling themselves compelled to agree to this, tried to cover their retreat by professing their intention not to meet the surgeons in consultations on medical cases. It was obviously an unwise notification, and we suspect that the plan was soon found to be unworkable.

Congress for Internal Medicine.—The twenty-second Congress for Internal Medicine will be held in Wiesbaden, April 12-15, under the Presidency of Dr. Wilhelm Erb, of Heidelberg. Heredity will be the subject under discussion for the first session. H. E. Ziegler, of Jena, will treat of the present-day position of Heredity in Biology; Dr. D. Martins, of Rostock, will discuss the Relationship of Heredity and Predisposition in Pathology, particularly with regard to Tuberculosis; Drs. A. Hoffmann and Paul Krause will discuss the Treatment of Leucemia by

the X-Ray; Dr. Schütz, of Wiesbaden, will discuss the question of the Mucous Secretion of the Intestines; Dr. H. Matthes, of Jena, will talk on Autolysis; Dr. Clemm, of Darmstadt, will speak on Plaster Bandages for the Stomach; Drs. S. Kaminer and E. Meyer, of Berlin, will discuss Diagnostic Injections of Tuberculin; Dr. A. Bickel, of Berlin, will speak on the Researches of Normal Salt Solution on the Gastric Secretions; Dr. A. Laqueur, of Berlin, will dilate on the Uses of the Bath in Heart Diseases; Dr. Aufrecht, of Madgeburg, speaks on the Successful Use of Tuberculin in Almost Hopesless Consumptives; Dr. Rumpf, of Bonn, will talk on Nephritis; Dr. L. Gürisch, of Parchwitz, will demonstrate Rheumatism in the Joints; Dr. O. Hetzel will speak on the Early Symptoms of Tabes Dorsalis; Dr. Bernhard Fischer, of Bonn, will speak on the Results of Adrenalin Injections; Dr. Lüthje, of Tübingen, will talk on Experimental Diabetes; Drs. Homberger, Kohnstamm, Goldmann, Pick and Turban will also read papers. There will be an exhibition of instruments, apparatus and preparations relative to Internal Medicine. Parties who desire to read papers or information regarding this meeting should address their inquiries to Dr. Emil Pfeiffer, 13 Parkstrasse, Wiesbaden, Germany.

Panama's Yellow Fever.—Dr. Charles A. L. Reed, a member of the joint commission appointed by the United States and the Republic of Panama to adjust property values in dispute between the two countries, and who has just returned from the Isthmus, says that the sanitary conditions in Panama are being improved as rapidly as could be expected. The delay hitherto, the doctor believes, has been due to the non-arrival of construction material, ordered in the United States. Dr. Reed said that the health authorities apparently had the situation well in hand when he sailed from Colon a week ago. "There have been just thirty-six cases of yellow fever in Panama, with twelve deaths, since July 12 last, when the first case was reported," said Dr. Reed. "Colon is not infected, or at least was not when I left there. Sensational reports of the widespread prevalence of the disease are due chiefly to the fact that every case of fever that is sent to Ancon, where all fever cases are sent, is at once supposed to be yellow fever. As a matter of fact, all such cases, unless so fully developed that diagnosis is unmistakable, are held until all doubt is cleared up. In this way seventy or eighty suspected cases have been proven not to be yellow fever, but no account is taken of this fact, and all are charged up to yellow fever. I lived two weeks at Ancon Hospital, visited the yellow fever ward, attended autopsies on those who had died of yellow fever, and was in close touch with the yellow fever board. This body consists of Colonel Gorgas, Major De Garde, Captain Lyster, and Dr. Carter, the strongest aggregation of yellow fever experts in the world. They meet daily in consultation over suspected cases, and their verdict, which is arrived at only after every scientific resource is exhausted, is authoritative. Everything that intelligence and energy can do with the limited facilities available is being done to stamp out the disease. The waterworks and sewerage system that ought to have been in place last December are not yet installed, simply because of dilatoriness in getting pipe to the Isthmus. The first cargo was being discharged when I left. This delay makes it impossible to suppress water-barrels and other disease-breeding centers. The city is, however, being very thoroughly fumigated, the streets are being kept clean, and garbage is being disposed of by our sanitary officers."

A Martyr of Science.—Tito Carbone, Professor of Pathology in the University of Pisa, died late last year of Maltese fever, acquired while studying the parasite of that disease. The *Archivio per le Scienze Mediche* has recently contained a biographical sketch by his friend, Prof. Foá. Born in 1863, the son of a poet of some fame, Carbone took an early interest in biological studies, and like F. Poupart, the outlines of whose life were given last month, devoted himself to the study of small animals. But while Poupart's researches extended over several classes of invertebrates, Carbone did not venture to aspire to the title even of an entomologist, but was proud of achieving a high reputation as "lepidopterist." On taking his medical degree he distinguished himself by energy and self-devotion during the cholera epidemic, 1886-87, and then became assistant to Prof. Lombroso as gaol surgeon. The enthusiasm with which he adopted the teaching of that great founder of criminal anthropology, and insisted on treating his charges as moral as well as physical "patients," brought him into opposition to legal prison officials and resulted in his resignation. After a visit to America he devoted himself specially to pathology, of which he became a professor at Cagliari, Modena, and finally at Pisa. Prof. Foá gives brief abstracts of his principal works in this capacity, *e.g.*, on the pigments of melanosarcoma and Addison's disease, on the pathology of gout, on the coagulation of the blood, etc. In the summer of last year he succeeded in isolating the *Micrococcus melitensis* from the body of a soldier who had died with obscure febrile symptoms, and his last work forms the most valuable contribution yet made to our knowledge of its pathological action. Both in animals and man the two dominant characters are the marked congestion of the abdominal viscera and the rapid destruction of the red and white blood corpuscles. This is accompanied by great dilatation of the blood vessels and the conversion of their endothelial cells into phagocytes, which rapidly absorb and remove the products of the decomposed cells. Hence, probably, the relative benignity of Maltese fever in patients all of whose organs are healthy. Unfortunately, in spite of spending his vacations butterfly hunting in the Alps and Apennines, Carbone was unable to escape a natural tendency to corpulence and emphysema accompanied by cardiac weakness. Consequently, when he appeared to be already convalescent from the disease he had so thoroughly investigated, he died suddenly from heart failure at the age of forty-one, leaving us to mourn the loss of a brilliant leader on the battlefield between disease and science.

Medical Defense in Great Britain.—A great deal has been heard lately about Medical Defense and its adoption by the British Medical Association. A somewhat elaborate scheme, writes the *Medical Magazine*, February, 1905, was submitted last year but has ended in collapse. At the present time there is a lull in the usually disturbed atmosphere of Medical Defense, and so it may be appropriate to consider a few of the salient features of this question, past and present. It was not till many years after artisans and laborers had learned to acquire, by combination, that power which individually they altogether lacked, that the medical profession began to recognize the weakness resulting from want of

union. Twenty or thirty years ago the overcrowded state of the profession, the senseless lowering of fees, the steady encroachments of the friendly societies and medical clubs, combined with the glaring injustice so often meted out to their medical servants, and the frequent blackmailing of unprotected medical practitioners, led some of the more vigorous spirits in the medical profession to plan means by which they might join together for mutual protection. It was thought also that if some body were formed capable of enforcing the law a stop might be put to the practice of innumerable quacks who competed with medical practitioners, robbing and lowering the medical profession, and working much injury to the health of the public. One of the earliest of the Associations formed for purposes of Medical Defense entered into a costly conflict with quackery, and succeeded in doing little more than proving the utter inadequacy of the existing medical laws to check the practice of unqualified or even of fraudulent practitioners. Want of success in its legal enterprises, and consequent want of funds, brought the career of this pioneer society to an early end. Subsequently the society from which the present Medical Defense Union developed was inaugurated, and its career was at first none too brilliant. The way had, however, been explored, and in stronger hands the Medical Defense Union soon entered upon a line of action which showed that medical men had sufficient business capacity to guard their own interests. The growth of the Union under the presidency of Mr. Lawson Tait was rapid. In fact it grew so fast that it became unsuited to the autocratic government which Mr. Lawson Tait had established. Hitherto the headquarters of Medical Defense had been at Birmingham. London, which seldom takes the initiative in anything, when the movement began to become an unequivocal success, commenced to assert its overpowering influence. A split resulted, and many of the leading members of the medical profession in London, who had looked askance at the Birmingham organization, now readily joined in the new movement. Its leaders did not hesitate to take advantage of experience already gained, and new ideas and new vitality were infused into this long-needed brotherhood of medical practitioners, ready and able to defend any of their number who might be unjustly attacked, and to protect the material interests of the medical profession generally. In many respects it was greatly to be regretted that there should have been more than one society formed for the defense of medical men, but, on the other hand, the good effects of a healthy rivalry have been more apparent than the weakness resulting from a division of forces. Be this as it may, there can be no question but that the formation of the latter society—the London and Counties Medical Protection Society—gave much fresh impetus to the effort of the medical profession to assert its proper power and influence or, at least, to maintain its dignity and to check the degradation which was fast overtaking it. Naturally, the British Medical Association, which had now established its pre-eminence among existing medical societies, did not remain unaffected by the prevailing sentiment. In 1886 an effort was made to induce the Association to undertake Medical Defense. The dominant section, if not the majority, of members was, however, averse from the Association becoming anything more than a scientific society, and the difficulty of taking up Medical Defense, under the existing Memorandum of Association, was gladly brought forward as a fatal obstacle to the proposed development. In 1897 a special meeting of the Association, by a very narrow majority, decided in favor of the general principle that the Association should actively maintain the honor and interests of the medical profession. The Council of the Association gave no effect to this resolution, and it was subsequently reversed by another general meeting of the Association. During the last three years, under the new constitution of the Association, the movement in favor of the taking up of Medical Defense by the British Medical Association has been vigorously renewed, but in the meantime the existing societies, formed for that specific object, have increased greatly in numbers and in influence. Without the consent of the existing societies to merge themselves in the British Medical Association it is doubtful whether the Association can do more than create a third combination with the same objects. What could have been done years ago without any difficulty has now become a complicated and difficult enterprise. A majority of the Association is no doubt now in favor of the general principle that the Association should defend its members, but there is the greatest diversity of opinion as to essential details. The present machinery of the Association, in the striving after perfection, has been rendered slower than ever, and while it grinds away one obstacle, ten others are developing. If the Association could see its way to offer fair terms to existing societies for taking over their members and for granting them proportionate representation and privileges, and, having made such offer, proceeded at once to establish a department for Medical Defense it could probably still obtain control of this important movement. But it was very nearly, if not quite, lost its opportunity, and in a year or two it will no longer be able to assume the lead to which its great numbers and influence might even yet seem to entitle it. The British Medical Association has failed to take the tide at its highest point, and its opportunity is fast ebbing away.

There is no insuperable obstacle to prevent the British Medical Association from forthwith successfully forming a Medical Defense Department, with a special subscription, admitting to this department all registered and qualified doctors and dentists whether voting members of the Association or not. If it does so, it may even yet possibly absorb the existing societies and consolidate Medical Defense. If it spends years over forming such a department, and does it feebly, and in a narrow, exclusive spirit, it will merely weaken societies which are now doing good work, and it will confer no benefit on the medical profession.

As regards the attitude of the existing societies toward the British Medical Association, it must be remembered that they have never yet obtained any definite expression of opinion from their members. The Council of a society cannot be said to represent the society itself. The matter must go to a general meeting and be voted upon. No poll of their members on this question has been taken either by the London and Counties Medical Protection Society or by the Medical Defense Union, and as so few members can be got to attend and vote at general meetings such a poll would be the only real test of the views of the society. No doubt the societies are a good deal influenced by the decisions of their Councils. In the case of the Medical De-

fense Union, its Council has definitely resolved to reject all advances from the British Medical Association. The Council of the London and Counties Society, on the other hand, has decided that any communication or scheme or proposals from the British Medical Association shall, at any rate, have full and courteous consideration.

OBITUARY.

Dr. IVAN AMILON, of Chicago, died last Wednesday in that city. Dr. Amilon was in practice in Philadelphia previous to his going to Chicago, as an examiner for the Equitable Life Assurance Company.

Dr. WILLIAM G. ROBINSON, of 142 East Fortieth Street, New York City, died at East Freetown, Mass., on March 2. Dr. Robinson was about fifty-four years of age, and had been ill for some time.

Dr. WARREN ELI REYNOLDS, for many years a physician in Harlem, died last week in a sanitarium, where he was taken two weeks ago from his home. He was a native of New York, fifty-six years old and unmarried.

Dr. CORDELIA POST HICKOX, the first woman to practise medicine in Iowa or west of the Mississippi River, died at her home in Cedar Rapids, Iowa, on Monday last. A graduate of the Cleveland Homeopathic Medical College, she went to Iowa in 1862. She was born in New York in 1827.

Dr. ADOLPH ZIPERLIN, an honorary member of the Faculty of the University of Tübingen, Germany, from which university he was graduated more than fifty years ago, died at his home, in Cincinnati, Friday last, aged nearly ninety years. He was a surgeon in the Union Army during the Civil War.

Dr. JOHN J. PRENDERGAST died last week at his home in Brooklyn. He was born in Boston in 1847, graduated from Seton College in 1864, and from the New York College of Physicians and Surgeons in 1868. He also took a course in the Columbia College Law School. Dr. Prendergast was for several years connected with St. Francis Hospital in Jersey City, and, with Dr. Thomas R. Poorley, he founded in 1888 the Manhattan Eye and Ear Hospital.

Dr. WALTER S. CHRISTOPHER, a well-known pediatrician, of Chicago, died of heart failure March 2 at his residence. He had been ill since last August, but in January it was hoped he would recover. He was forty-six years old, and was born in Newport, Ky., in 1859. He was educated in the public schools of Newport and Cincinnati, and was graduated as a doctor of medicine from the Medical College of Ohio in 1883. During the last year of his course in the college he was an interne at the Cincinnati Hospital. In 1884 he became demonstrator of chemistry, and continued in this relation until 1890. In 1890 he was called to the Chair of the Theory and Practice of Medicine in the University of Michigan. After a year's service he came, in 1891, to Chicago, and was appointed Professor of Diseases of Children at the Chicago Policlinic. A similar appointment to the College of Physicians and Surgeons was made in 1892. For two years, 1898-1900, Dr. Christopher was a member of the Chicago Board of Education. He was instrumental in establishing the system of medical inspection for the schools, and the child study department. He was a member of several local medical societies, the American Medical Association, and of the American Pediatric Society.

CORRESPONDENCE.

OUR LONDON LETTER.

(From Our Special Correspondent.)

LONDON, February 25.

QUEEN ALEXANDRA AT THE COLLEGE OF SURGEONS—THE RELATION OF LONDON HOSPITALS TO MEDICAL SCHOOLS—THE TREATMENT OF INCIPIENT INSANITY—PROFESSIONAL SECRECY.

THE newspapers announced that the Queen paid a visit to the Royal College of Surgeons on February 15 and "expressed herself delighted with all she had seen, and hoped the good work which the college is accomplishing would long continue." This reminds one of Marshal MacMahon's famous remark to the colored student at the Military College of St. Cyr. The Marshal, who was then President of the French Republic, was as little of an orator as another famous soldier and president, General Grant. He had to deliver the prizes to the cadets and was supposed to say a graceful word of encouragement to each. But the poor man could only give all who came before him the stereotyped advice "Go on." When, in due course, the colored youth was presented to him, the President delivered himself of the sapient remark, "*Ah, vous êtes le nègre: eh bien, continuez!*" It is probable that after such encouragement from royalty the College of Surgeons will continue. My respects for the Veracities, however, compels me to state that Her Majesty did not appear to some of those who were present when she inspected the scientific treasures of the College to take a particularly intelligent interest in what she saw. She is very deaf, and Sir Frederick Treves, who played the part of showman, had to shout his explanations into the royal ear. She was shown specimens of diseased appendix, but seemed to be more interested in freaks and deformities. Her thick, drawling speech makes it not altogether easy to catch what she says, but as her comments were for the most part limited to such exclamations as "How h*aw*rible!" this did not matter much. Her most original observation was in reference to a specimen of congenital syphilis in a child, which she said looked "like a mongkey." One thing which was noted in the Queen may interest your lady readers. On close inspection she looks just as youthful as she is represented in her photographs; there is no trace—at any rate, none visible to the masculine eye—of make-up by enameling or the grosser arts of the toilette. Her skin is wonderfully fresh and healthy-looking; but whether this is altogether natural or a masterpiece of "face massage" this deponent will not take it upon himself to say.

For years past Mr. Stephen Coleridge, the leader of the antivivisection agitation in England, has striven to divert the subscriptions of the charitable from hospitals with medical schools attached on the ground that these contributions were applied toward the maintenance of the school, and thus to the support of vivisection, as well as toward the relief of the sick poor. In this endeavor he has not been very successful, because, although it was thought by many that he had a good case, it was felt that he only made it a pretext for attacking a method of research which he dislikes. Some time ago a committee was appointed by the Prince of Wales, as President of King Edward's Hospital fund, to inquire into the financial relations between the hospitals and the medical schools. The committee consisted of Sir Edward Fry, Ex-Lord Justice of the Court of Appeal, the Bishop of Stepney, and Lord Welby, for many years Permanent Sec-

retary of the Treasury and sometime Chairman of the London County Council. Their report was issued a few days ago, and their findings are generally in favor of Mr. Coleridge's contention. Of the twelve hospitals in London which have medical schools in connection with them only two (University College and King's) are completely absolved; while in the case of two others (Guy's and the Royal Free, which is the hospital where the students of the London College for Women gain clinical experience) the charge is declared to be not proven. In the case of the eight other hospitals—Charing Cross, London, Middlesex, St. Bartholomew's, St. George's, St. Mary's, St. Thomas's and Westminster—the Committee find that contributions, either direct or indirect or both, have been made to the schools out of the funds of the hospitals. On the question whether the hospitals derive any counterbalancing benefit from the schools in return for these contributions, the Committee find that, in some cases, the fact that a large body of students and of medical men are being, or have been, educated in a hospital diffuses a wide interest in that institution and thus tends to aid the finances of the hospital. Moreover, "the presence of a body of eager young men watching the proceedings of their teacher has the tendency to keep the medical man on the alert, and to counteract the effects of the daily routine of duties;" and "the opportunity for teaching a large number of pupils attracts to hospitals with schools the gratuitous services of the most eminent men in the profession." The Committee further express the opinion that the publicity which attends the work of a hospital where there is a body of young men in attendance tends to maintain at a high level the whole work of the institution. The Committee think, however, that no saving of expense can be attributed to the presence of medical students who act as clerks and dressers. With regard to the welfare of the patients, the opinion is expressed that "probably, in cases of great obscurity and difficulty, the presence of a large number of students may at times be useful." On the other hand the Committee think that the quiet of an hospital without students must often be a comfort to patients. As regards the advancements of medical science and the consequent benefit to the public, the existence of a medical school is in their opinion of the highest value. "London," they say, "probably offers the greatest facilities of any city in the world for clinical teaching and for surgical and medical research, and we regard it as of the highest importance that the greatest use should be made of these facilities." The general conclusion at which they have arrived is that "the schools confer certain considerable benefits on the hospitals, and the hospitals confer on the students a very great benefit, because without admission to such institutions the students could obtain little or no clinical teaching. These mutual benefits may, the Committee think, be fairly set off the one against the other. If that be done it follows that in the case of the schools which last year received benefits in money or money's worth from the hospitals over and above the benefits last alluded to, there is no return made by the schools to the hospitals which can be treated as recouping this expenditure of the hospitals, and that the schools still remain debtors to the hospitals in respect of these pecuniary contributions." For the future the Committee proposes that the distinction between the hospital and the school should in every case be drawn with such clearness that it may be understood by the general public, so that no question may arise as to the destination and application of moneys contributed whether by the King's Fund or from any other source. The Committee do not limit their pronouncement to the terms of the reference, but go on to say that they have formed the opinion "that a broad line of distinction ought to be drawn between the studies of the first three years of a medical student's curriculum and the studies of the last two years, or, in other words, between the preliminary and intermediate studies on the one hand and the final studies on the other; and that while the latter studies can only be pursued with advantage within the walls of a hospital, and nowhere in the world with more advantage than in London, the earlier studies have no real relation with a hospital, and are therefore more properly to be pursued in an institution of a university character; and, further, that the attempt of many hospitals to associate with themselves schools teaching the preliminary and intermediate subjects is a great, if not the chief, source of the exhausted condition of the funds of many of the schools and the consequent demand of the schools on the funds of the hospital." The report has naturally been hailed with jubilation by Mr. Coleridge and his followers. But his victory is a hollow one, for after all the findings of the Committee are in accord with what has been for many years the feeling of those most actively interested in the improvement of medical education and the advancement of science. The multiplicity of schools imperfectly equipped and inadequately staffed in point of quality as well as quantity has been recognized as a source of weakness and hindrance of development. The doom of the hospital schools pronounced by the Committee will be accepted with satisfaction by all but those having a vested interest in these institutions. Most of them are on the verge of bankruptcy; some indeed, it is whispered, are suspended over the abyss by so slender a rope that the clinical teachers, so far from receiving any emolument, have to pay for the privilege of imparting instruction. In regard to schools of constitution so dilapidated as to need all this artificial support, reformers may well say, "Cut them down: why cumber they the ground?" They are worse than superfluous, for they give the enemy cause to blaspheme. The difficulty has hitherto been largely want of money; but the Committee express the hope that the University of London may now get sufficient funds to enable it to provide scientific teaching in anatomy, physiology and other preliminary subjects of a kind and on a scale worthy of a great university.

At the annual meeting of the Neurological Society, held on February 16, Sir John Batty Tuke, expert in mental diseases and Member of Parliament, pleaded strongly for the treatment of insanity in its early beginnings. Our whole conception of the nature and causes of acute insanity has, he said, been revolutionized by the advance in knowledge of the action of toxins on the structure and functions of the nerve cell, and especially the cortical cell. There is now, he holds, the strongest evidence of toxemia in certain forms of acute insanity and of the rapid implication of structure as a result of these poisonous agents. Physicians are being forced to the conclusion that the mental symptoms in the acute psychoses are manifestations of a toxic physical condition just as the delirium of fever is a symptom of certain phases of intoxication of the nervous system. The existing Lunacy Laws are based on the older notions of the nature of insanity as being something different from corporeal disease. Their general tenor is toward the protection of the mentally afflicted rather than toward the cure of sick persons. On this ground Sir John Tuke said he had urged on the Government the appointment of a Royal Commission to consider whether a change in the law is or is

not necessary in the public interest. In England at present incipient cases among the poorer classes of the community cannot be treated till they are so far advanced as to be certifiable, that is to say, till the morbid action has gone so far as to make recovery tedious and difficult and often impossible. To the accumulation of unrecovered insane persons Sir John Tuke thinks the alleged increase of lunacy to be mainly due. He appealed to the experience of those whom he addressed to confirm his statement that if treatment were applied in the initial stage recovery would be far more frequent and relapse far more rare. He urged the establishment of hospitals in which cases of incipient insanity could be kept under observation and treated like other cases of disease. He pointed to the example of Glasgow, where some years ago special wards were set aside in one of the city hospitals for the treatment of lunatics. Of 1,345 persons admitted between 1899 and June, 1904, 1,052 were discharged "recovered" or "relieved," 86 died and 183 were sent to asylums. Encouraged by these results the civic authorities built a pavilion in connection with one of the general hospitals for the reception of insane persons. From June to December, 1904, 260 were admitted to this institution, of whom 155 were discharged "recovered" or "relieved," 62 were at once sent to asylums and 13 died. It has been said that the majority of these cases were "drunks." Sir John Tuke, as the result of personal inquiry, says that of the total number of cases admitted since 1890 only 28 per cent. are alcoholics. He pointed out that the treatment of lunatics in special hospitals or in special wards of general hospitals is carried out extensively in Germany and to a less extent in Austria, Italy, Switzerland and the United States. He added that a bill amending the existing Acts and providing for the early treatment of incipient cases will be submitted to Parliament in the present session.

At a meeting of the Medico-Legal Society on February 14, Dr. A. G. Bateman, Secretary of the Medical Defence Union, read a paper on Privileged Communications and Professional Secrecy. He pointed out that in this country the medical witness when giving evidence in a court of law can claim no privilege in regard to matters relating to his professional attendance or secrets pertinent to the issue before the Court that may have been confided by him by patients. In the famous case of the Duchess of Kingston it was laid down by the great judge, Lord Mansfield, that "a surgeon has no privilege when it is a material question on a civil or criminal cause to know whether parties were married or whether a child was born, although his introduction to the parties was in the course of his profession and in that way came to his knowledge." "If a surgeon," the judge went on to say, "was voluntarily to reveal these secrets he would be guilty of a breach of honor and of great indiscretion, but to give that information in a Court of Justice which by the law of the land he was bound to do, will never be imputed to him as any indiscretion whatever." Many other English judges have given similar rulings. Judges differ, however, as to the consequences to a medical witness who should refuse matters confided to him in his professional capacity when ordered by the Court to do so. He may be sent to prison by one judge while by another he may be upheld. Most authorities hold that a doctor is bound to give information if it should come to his knowledge in the course of his practice that a crime has been committed. But Mr. Justice Hawkins, in the case Kitson vs. Playfair, said it would be "a monstrous cruelty" if a doctor called to attend a woman who had attempted to procure abortion were to inform the police of the fact. In English courts actions for breach of secrecy are unknown, but in the Scottish Court of Sessions it has been judicially decided "that secrecy is an essential condition of the contract between a medical man and his employers, and breach of secrecy affords a relevant ground for an action for damages." The Society was invited to consider the following questions: (1) Can the medical profession obtain the same or a similar measure of privilege which attaches to a lawyer, and would it for the public benefit if this were conceded? (2) Given the commission of a crime such as abortion, is it right for a medical man to give information to legal authorities? (3) Is there any danger, should a medical man not disclose the fact of a crime having been committed, of his being guilty of concealment of a felony? (4) Is the mere concealment of the knowledge of a felony sufficient to make a person *particeps criminis?* Dr. Bateman's paper gave rise to an animated discussion which, however, threw no particular light on the problem of professional secrecy and left his conundrums unanswered.

"DE MORTUIS NIL NISI BONUM."

To the Editor of the Medical News:

DEAR SIR: In letter appearing in your issue of this date, and from your London correspondent, very grave injustice is done to my dead friend, Doctor Roose.

Doctor Robson Roose is of an excellent family, one branch of which is titled, he was of liberal education, widely traveled, of polished manners, splendidly certificated as a medical student, and he was the protégé of Sir William Jenner, physician to Queen Victoria, as well as the friend and physician of Sir Michael Hicks-Beach, and other British ministers.

I walked with him, in Paris, the wards of the Beaujon Hospital, in 1869, just before he entered upon his practice at home, and I have known him intimately ever since. He succeeded in families of every grade, up ao and including royalty, *because he deserved to succeed,* because he was a true Christian gentleman, "with malice toward none," an indefatigable student, and an intuitive physician.

This presents him in a very different light from the sneering commentatory of your correspondent, to whom other successful British medical men, otherwise venerated, also seem to give special offence.

If it were ever permissible to dip one's pen in gall, and write venomously of one's colleagues, methinks it would hardly be so in the presence of the maxim, "*De mortuis nil nisi bonum.*"

Yours very truly,

FREDERICK WOOSTER OWEN, M.D.

Morristown, N. J., March 4, 1905.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, held December 15, 1904.

The President, Andrew H. Smith, M.D., in the Chair.

SYMPOSIUM ON THE SURGICAL DISEASES OF THE KIDNEY.

The Diagnosis of the Surgical Lesions of the Kidney and Ureter.—Dr. L. Bolton Bangs, in opening the discussion, said that the profession was more inclined to form its opinions and base its practice upon its personal experience rather than upon hearing and reading the experiences of others, but there was no question regarding the value of such a symposium as had been presented this evening and, although it was

difficult to select from such a feast, he wished to make a few remarks upon one or two points that had occurred to him during the reading of the papers. He was impressed with the fact that the more experience one had with renal surgery the greater the value of making a precise diagnosis preliminary to operation. He had been struck, in reading the books of the great operators such as Israel, with how emphatically it was stated that prior to operation a careful and, if possible, definite diagnosis should be made. Notwithstanding the importance of this, he confessed that he had met with cases where it was impossible to make a preliminary, definite diagnosis the group of symptoms not being clear enough. In such he had found it necessary to make an exploratory operation in order to make a diagnosis possible. After listening to Dr. Sondern's paper one must not infer that it was an easy matter to determine the functional capacity of the kidney. This is highly important and should be determined if possible. Dr. Bangs said he had been much interested in reading a very clever book by Caspar and Richter, who recommended in all cases the catheterization of one ureter or both in order that an examination of the urine from each kidney might be made. Moreover one should be very careful to know whether or not a second kidney is present. In the hands of the most careful men during the earlier days, before the introduction of the more precise means of diagnosis which were now at hand, one kidney had been operated and, at autopsy, it was found that one kidney was congenitally absent. As to the question of skiagraphs, Dr. Bangs said that he had had a rather mixed experience and he was very grateful to Dr. Cole for the enlightenment he had given. Dr. Bangs said he had come to the conclusion that he had not the requisite training of the eye to define the shadows cast and he believed that this should be left to the expert.

Dr. F. Tilden Brown, in the discussion, said that although the evening's topic did not include the therapeutic uses of cystoscope, he would like permission to announce an innovation in this field which he believes to be of promise, namely the ureter catheter and some other material as agents in the dislodgment of ureteral calculi. In a patient of Dr. Alvarez, the stones being clearly shown in an X-ray picture made by Mr. Caldwell, and where the speaker had inserted a fine ureteral catheter beyond the lowest stone and given a warm boric acid injection, the patient two days later presented Dr. Alvarez, when about to operate, with a box containing the stones. Dr. John L. Andrews, knowing the facts in this just previous case, wished the efficacy of catheterization and injection tried on a patient of his before submitting him to operation which the man—a long-time sufferer—was prepared to undergo, the same gratifying result was here also attained. Encouraged by such an experience the speaker is prepared to state that some stones, lodged even for years, may be freed and passed from the ureter after a dilatation of the distal portion of the canal by catheters of increasing sizes and some aqueous medium, oil or glycerin, injected. Whether a catheter can be passed beyond the stone or not the injection of some warm sterile solution to distent the upper ureter and renal pelvis will tend to increase the vis-a-tergo and enhance the chances of successful expulsation on the withdrawal of the catheter. It is probable that the majority of lodged ureteral calculi do not completely obstruct the canal. Consequently the catheter, if introduced only as far as the stone and if of as large a size as the ureter will admit, so as to have no leakage about it, can be turned to additional advantage by injecting through it or when its lumen is temporarily closed with a rubber cap or plug, by thus damming back the urine for its distending as well as increased expulsive effect on withdrawal of the catheter. With a view to accomplishing a more rapid dilatation of the ureter Dr. Brown is now experimenting with dried laminaria in tubular and solid forms. This water plant, formerly much used for dilatation of the uterine cervix, under the name of tents, was at times not free from serious consequences, but the absence of asepsis in those days was clearly the main cause. If this substance can be sterilized without detriment to its drying and later hygroscopic qualities, the first requisite will have been obtained, for it will be quite feasible to pass one of these small cylinders with the ureter cystoscope, the bladder being best distended with air so as to avoid any fluid contact with the laminaria tent until this is in the ureter, where in a very short time, influenced by the urine or the injected fluid, it can dilate the caliber of this tube to three or four times the original size. By being made tubular, with a spiral wire center, urine can flow through the ten under control of the operator, and the whole be withdrawn at any desired moment. Any one who has cut for or seen the operation for calculus in the lower segment of the ureter is well aware of its magnitude; and to all, except those most dexterous surgeons who revel in difficult feats, a procedure which offers promise of relief without the knife will probably be viewed favorably. In the newer adaptations for ureteral catheterization and the rapidly growing number of expert cystoscopists we see sufficient reason to anticipate affirmative reports following such undertakings in the near future.

The particular cystoscope, according to the testimony of a number of disinterested users, which has rendered ureter catheterization so comparatively simple is shown on page 443, in one of its several forms. This instrument is made by the New York firm of Wappler Brothers. Its original features and mode of use were described in the medical and surgical reports of the Presbyterian Hospital for 1902.

Dr. Francis C. Wood said that he heartily agreed with Dr. Sondern regarding the slight value of the leucocyte count in many cases of severe sepsis, and the great value of the relative count of the different forms of leucocytes. He would like to add that the determination of the presence or the absence of an iodophilic reaction in the leucocytes was also of great importance in a decision as regards operative procedures. A number of cases which he had been enabled to observe in the wards of St. Luke's Hospital had shown that even if the total leucocyte count were low, when the polynuclear leucocytes were relatively high and an iodophilic reaction was present, pus had been invariably found on operation. With regard to cryoscopy, he could not take so favorable a view of the results as that expressed by Dr. Sondern. If one relies upon the brilliant papers of Kümmell, the diagnosis of a renal insufficiency would appear to be a simple matter, and the determination of the possibility of an operation equally easy from the freezing point of the blood. The speaker's own experience of the method, extending over a period of about five years, had led him to think very highly of it; but he recognized that there were a considerable number of exceptional cases. In all such work the general look of the patient, the findings on physical examination, and the skill of the surgeon were the most important points. If, for example, the blood froze at -.60° to -.63° C., it has been stated by many of the German surgeons that it was unwise to operate, for the reason that such patients frequently suffered

from anuria after any operative procedure or even after the administration of an anesthetic. A case of this type with double pyonephrosis and a low freezing point had recently been operated upon with the most brilliant results, the freezing point of the blood returning to normal as soon as the kidneys were drained. Another point in the general use of cryoscopy is that the technic is exceedingly difficult and the results, unless determined with the greatest care, were of no value. The examination of the urine obtained from each kidney by catheterization of the ureters was a valuable aid in diagnosis. The freezing point, however, gives nothing especial in determining the efficiency of the secreting power of the kidney which is to be left in. That kidney, though passing a urine of fair quality, may still be insufficient when the other organ is removed, or on the other hand, may prove to be capable of sustaining life even though the quality of urine passed may have been very poor before operation.

Dr. B. Farquhar Curtis said that the general surgeon often received great assistance from the progress made in the art of special diagnosis. But too frequently when a case was brought before him he had found that these complicated methods of diagnosis failed. In many instances the ureters could not be catheterized. His personal experience was limited to the Kelly method, and when he found that he could not enter the ureter, he had called in an expert in male cystoscopy and ureteral catheterization, and yet he had failed to gain an entrance. The difficulties of catheterization seemed to him still to be great, but when it could be done and a good specimen of urine obtained it was a very valuable adjunct in diagnosis. He would urge the necessitiy of simplifying the methods or increasing the skill of the expert, so that the patient would not suffer so much in the manipulations.

Regarding the examination of the urine he had found too that the laboratory findings did not answer his questions; sometimes the tubercle bacilli could not be found in the urine and yet a tuberculous kidney existed; sometimes the urine was decomposed, or filled with pus and other deposits, which would obscure the microscopical examination. But it must also be acknowledged that the simple and ordinary clinical symptoms were often misleading; oftentimes pain existed without apparent cause. In some of these cases the kidney had been opened under the supposition that a calculus was present, causing the pain, and the patient had been relieved, although no cause for the pain could be found, the result justifying the operation.

Dr. Eugene Fuller said that there was one special point in Dr. Sondern's paper that interested him, and that was the question of urea, albumin and casts. There was a time, not very long ago, where a diminution in the amount of urea, or the finding of casts, were sufficient indications to prevent one from operating upon the lower urinary tract. Where urgent symptoms were present he did not think it necessary to postpone operations simply because urea was diminished or because of the presence of casts or albumin. If the kidney was working against an obstruction it was far better to operate promptly than to wait for the kidney to be still further damaged. Even though a patient had had uremic attacks and was suffering from uremia when coming under observation, the trouble being caused by an obstruction, he said it was wonderful in how many cases the kidney lesion would repair itself when the obstruction was relieved. With regard to the presence of tubercle bacilli in the urine, he inreferred from what Dr. Sondern said that many people got tired of searching for them before they found them. He said he was much interested in the beautiful skiagraphs presented by Dr. Cole. The introduction of the catheter into the ureter and then taking the skiagraphic picture, as suggested and practised by Dr. Brown, was a very valuable aid. Dr. Fuller was not inclined to be so pessimistic as Dr. Curtis regarding ureteral catheterization; he did not think it was a very painful procedure in the hands of an expert. He believed the passing of the cystoscope through the deep urethra was the painful part of the procedure, while the actual catheterization of the ureter was not so. It was wonderful the amount of tolerance the ureter had, and how little reaction followed catheterization of it.

Dr. John F. Erdmann said he would limit himself in the discussion to considering the question of intercurrent or concurrent diseases, and presented four specimens of stones with the photograph of one as it looked when properly mounted. Of these four stones, three were removed by operative procedure, the fourth being passed voluntarily. The large stone (the one accompanied with the photograph), when he was called, was supposed to be a case of intestinal obstruction with all of the profound symptoms which accompany such a condition; pulse 140, temperature 103° F., abdomen distended, no movement of the bowels for three days, the latter easily explained by the fact that she had morphine, with a large tumor in her left side which occupied the entire left loin and extended down into the iliac fossa. In taking a careful history, evidences of having passed a small calculus and urine with pus for some time before were obtained. A specimen passed that day contained considerable pus, sediment, and also one small calculous body. The tumor on palpation appeared to be retroperitoneal, fluctuant in its main portion and boggy in the lower portion. A diagnosis of perinephritic abscess was made and emergency operation done, an immense quantity of urine and pus were liberated as soon as the fat capsule of the kidney was entered, and perforation of the pelvis of the kidney was observed through which the pus and urine were escaping; this was drained. Six days later it was necessary to remove the kidney owing to the continued sepsis; twenty small stones were found in the kidney. A period of three or four months later, the same symptoms attacked the patient on the right side. An X-ray showed a very large calculus (the one shown tonight) and nephrotomy was done through the pelvis of the kidney, and this large stone removed. Patient made recovery. The second case was from a male, four years old, who gave all the symptoms for a number of years of appendicitis and a history of an attack early in life. No blood was found in the urine at this time. He had been in consultation with numbers of the best general practitioners and surgeons in the city and surrounding neighborhood. He was seen by Dr. Nathan Potter, who, after a series of urine analyses obtained evidences of blood. Dr. Potter felt that he had no appendicitis, but that his trouble was stone. I personally felt that he had appendicitis with the bare possibility of stone. An explorative operation on the appendix was advocated at the same time exploring the ureter. This was done and a badly diseased adherent appendix was found, and a large number of adhesions removed from the cecum, but nothing was found in the ureter. A pronounced feature in favor of the diagnosis of appendicitis after operation was the fact that the patient was able to eat foods, that he had not been able to for a period of years. At the end of about three or four months, pain again appeared which was absolutely in the region of McBurney's point. This pain was so intense as to require chloroform to produce relief.

Urine examined at this time showed free blood. An X-ray taken before the first operation proved negative, an X-ray taken at this time showed evidence of stone in the pelvis of the kidney. A nephrotomy was done removing the stone through an incision in the pelvis of the kidney, with recovery. The third specimen stone, passed voluntarily, was obtained from a medical student six years ago in whom there was no question at the time of the diagnosis. This patient, though, also had digestive symptoms, and within a short time after passing his stone he was seized with an attack of gangrenous perforating appendicitis, for which he was operated on with recovery. The fourth specimen was removed three weeks ago from a male twenty-two years old, who gave absolutely sharp evidences of both diseases, appendicitis and kidney stone. There was no question in regard to the double diagnosis, although it required four X-rays before the stone was shown. It was then found to be in the pelvic portion of the ureter near the spine of the ischium. The patient was operated upon through a transverse skin incision just below the line of the usual appendix site. The muscle fibers were separated in their axis until reaching the transversalis fascia. This was divided in the axis of the rectus. The appendix which was adherent and involved was removed, the ureter explored, a stone located one and a half inches from its bladder entrance, the ureter opened extraperitoneally, two sutures taken in the ureter opening (peritoneal cavity having been closed previous), a small rubber tissue drainage down to the site of the operation in the ureter and the rest of the abdominal wound closed. The patient was discharged on the 14th day. All the cases had marked digestive disturbances. Two had pronounced hematuria, and one had pyuria, and one had ureter catheterization.

Dr. Frederic E. Sondern, in reply to Dr. Wood's tatement regarding cryscopy, said that Koranyi and his followers believed that when the freezing point was low it did not mean that no operation should be performed, but that no renal parenchyma, however diseased, should be removed. Probably, in cases of this kind, operation should be incision and drainage, but *not* removal of renal parenchyma, which would further jeopardize the patient's life.

Dr. Lewis Gregory Cole, in reply ti Dr. Bang's remarks, said that out of 179 cases examined by him during the last eighteen months only three occurred in which he could not make either a negative or positive diagnosis, or where the diagnosis had been incorrect. In one of these the patient, a man weighing 217 pounds; another was a woman who weighed over 200 pounds. In the third the plate was not high enough to show the presence of a stone in the kidney. In one of these cases only a partial diagnosis had been made, the mistake being made because he had been unable to see the edge of the stone; he could see a definite shadow, but the edges were not clear cut.

Dr. F. Tilden Brown said he wished to have it placed on record that he believed the improvements made in the cystoscope would enable men to relieve those distressing cases in the future where there was an impacted stone in the ureter. The surgical procedures attending the romoval of calculi in the lower segment of the ureter was accompanied by many difficulties, and if something could be substituted for such an extensive operation it certainly would be of great value. He felt much encouraged in this because of the results he had already had in catheterizing the uterus. He said there was but little reason to doubt that these calculi which became lodged in the ureter for some time could be dislodged if the catheter, in many cases, could be passed in and irrigation practised. His scheme would be to have ureteral catheters of increasing sizes, and, where calculi were seated in the ureters low down, to introduce spongiopile or laminaria tents and dilate this portion so as to enable the stones to escape. With the improvements in sterilization today this seaweed could be so prepared that they could be left in the lower part of the ureter to distend the canal to the size required without danger of ill effects. Dr. Brown wished to express his approval of the work Dr. Fuller was doing.

Election of Officers.—President, Dr. Charles Loomis Dana; Vice-President, Dr. T. Mitchell Prudden; Trustee, Dr. Abraham Jacobi; Treasurer of Board of Trustees, Dr. Reginald H. Sayre; Committee on Admissions, Dr. William C. Lusk; Committee on Library, Dr. L. Emmett Holt; Delegates to State Medical Society, Drs. David Bovaird, James Ewing, Charles L. Gibson, Homer W. Gibney and Edward L. Keyes, Jr.

NEW YORK ACADEMY OF MEDICINE.

ORTHOPEDIC SECTION.

Regular Meeting, held December 16, 1904.

The President, Homer Gibney, M.D., in the Chair.

Tumor from the Shaft of the Left Femur.—This specimen was presented by Dr. Homer Gibney, who said it was from a patient operated on recently by Professor Bull. The history of the case is, briefly: Male, thirty-three years of age; specific history at the age of twenty years; treatment continued three years. At the age of twenty-nine years he began to have twinges of pain in the left knee, very slight, thought to be rheumatic. A small nodule appeared on the inner aspect of the knee, which gave him no discomfort, and little attention was paid to it. During the following three years he was conscious of the increasing size of the knee, but this was so gradual and painless that he did nothing for it. Two years ago, however, he found he could flex it with difficulty, and soon thereafter was unable to do even this. Meantime, his leg was becoming noticeably larger, and infrequent paroxysms of pain during the night were relieved by standing or the upright position. For the past six weeks the pains have been more frequent and more lasting, discomfort greater, locomotion interfered with.

Examination.—He presents a large irregular mass on the left leg, extending from below the knee three inches upward and including the knee to about the upper third of the femur, terminating abruptly, and a distinct nodule on either side of the knee, one over the inner tubercle of the tibia and another on the outer lower third of the femur. The comparative measurements are: Right knee above the patella, 16 inches; over the patella, 15¾ inches; below the patella, 14½ inches; left, 21½, 23, 16 inches, about 5 degrees of motion. The mass was hard and no fluctuation could detected. A diagnosis of osteosarcoma was made. Advised exploratory incision—amputation. X-ray showed a rather uniform mass completely encircling the knee-joint, and extending to about the line of the upper third of the femur. The line was a trifle lighter than the shaft presented. Subsequently he went to the hospital and amputation was done. Good hard bone was met and he stood the operation well.

The tumor was sent to Dr. Norris who makes this report: "The specimen is a tumor of the left femur. The shaft of the femur is completely surrounded by a cylindrical or fusiform shaped growth of firm, bony tissue. The specimen measures 51 cm. in its greatest circumference, just above the condyles, and extends

from the condyles, upward along the shaft of the femur, for a distance of 19 cm. It measures 43 cm. in its middle part; in its widest portion, 16 cm. in breadth. The new growth consists of very firm, bony tissue, which measures 19 cm. in length, and extends from the shaft anteriorly, 4½ cm. in its greatest width. Posterior to the shaft there is likewise an extensive formation of new bone, which extends into and involves the muscles and tissues behind the bend of the knee-joint.

"The cortical portion of the shaft has become rarified, but, nevertheless, remains distinct throughout the course of the tumor. The cartilages of the knee-joint are not eroded. The marrow of the shaft has apparently not been involved. The patella is not involved, but the articular surfaces for the patella are the seat of a growth which, in appearance, is chondromatous. The peri-articular tissues are very much thickened, firm in consistency, and have all the appearances of a fibrosarcoma. In several places there are, most notably on the anterior portion of the tumor, nodules 1 cm. in size, which, in appearance and consistency, appear to be chondromatous. In places, the new growth is sclerotic, whereas in many places it is much softer in consistency. The tumor is periosteal osteoscaroma of the femur."

Tuberculosis of Knee Joint Following Gonorrheal Arthritis.—Dr. George R. Elliott reported this case. He said the patient had had the knee resected, and was wearing a plaster splint, so he could not show very much to the section. The case was of interest to him on account of the difficulty in making a diagnosis, and others had experienced a similar difficulty. Man, aged forty-five years, gave a history of having had gonorrheal arthritis eighteen years ago. The knee-joint was opened at one of the hospitals and drained, and he recovered. Has been going on without much disability and no pain ever since, until about a year ago, when he began to feel a certain amount of disability and pain, accompanied by considerable irregular swelling. The symptoms continued to increase in severity. Dr. Elliott saw the patient in June. At that time he had irregular swelling of the left knee, with fluctuating mass on the external and posterior surface. He had about one inch atrophy of the thigh, and very little pain upon moving the joint. There was no reflex spasm present, but there was tenderness of the head of the tibia. The speaker had some of the fluid removed and sent for pathological examination, and this was reported negative. A fixation splint had also been applied, but the symptoms increased so that it became impossible for the man to stand and walk, and at that time a diagnosis of osteomyelitis albuminosa following gonorrheal arthritis was made. This was based on the character of the fluid examined, tenderness of the head of the tibia, contour of the joint, absence of reflex spasm and general history of the case. The well-marked symptoms of tuberculosis were absent. The patient was admitted into the service of Dr. A. A. Berg, Mt. Sinai Hospital, and an X-ray showed tremendous exudate about the joint and great irregularity of the head of the tibia and condyles of the femur. From the examination of fluid and X-ray it was supposed to be an osteomyelitis of the type mentioned. Dr. Berg resected the joint and found a tuberculous mass with very extensive exudate. Union had taken place. Interest lies in the fact that the disease followed gonorrheal arthritis of years ago; a clinical picture of periostitis or osteomyelitis albuminosa with, however, well-marked tuberculous findings.

Pott's Disease with Some Unusual Features.—Dr. P. W. Nathan described this case. He presented the third and fourth lumbar vertebræ, removed from the body of M. P., female, aged twenty-four years. The vertebræ were firmly united by bony anchylosis. Not alone the bodies but also the articular processes are united by dense bony tissue. The height of the left half of the third lumbar vertebra is diminished by half, and it contains a tuberculous focus on its anterior surface. Where the two surfaces of the vertebræ come together, on the right side, there is a tuberculous focus about the size of a lima bean, which contains a large sequestrum. The posterior surface of the body of the third lumbar vertebra contains two foci about the size of a pea. All these foci communicate with the interior of the bone. On longitudinal section of the bodies of the vertebræ the intervertebral disk has been completely destroyed, and that the two bodies are united by very dense bone. The spongy tissue of the body of the third lumbar vertebra has been almost entirely replaced by dense bone, and more than half the body of the fourth lumbar vertebra is similarly affected. Clinically, this case was interesting because all symptoms of Pott's disease were absent before the appearance of a psoas abscess. In fact, back symptoms were not manifest until some time after the abscess was incised. The disease lasted about three years from the time of the abscess, but there never was any kyphosis. The absence of the kyphosis is accounted for by the fact that the disease was confined entirely to the lateral portions of the third lumbar vertebra. It is remarkable that the foci in the posterior part of the body of the third lumbar vertebra did not cause symptoms of paraplegia. These are, however, not apparent during life. The compensating proliferation in ostitis so common in other inflammatory conditions of bone is quite unusual in tuberculous disease. At any rate it almost never occurs to the extent found in the specimen presented this evening. Undoubtedly the disease had existed long before the advent of the psoas abscess in our case, but the new bone formation compensated for the very gradual destruction of the vertebræ, and for this reason the external signs were never pronounced. The bony anchylosis, which is somewhat rare in Pott's disease, was another hindrance to the usual forward tilting of the spine.

Dr. H. W. Frauenthal read the paper of the evening, entitled "Gonorrheal Arthritis." Will be published in a subsequent issue of the MEDICAL NEWS.

Dr. Wm. P. Northrup, in the discussion, said that he was much interested in the kind of joint. In all infectious diseases there is found the same kind of joint occasionally as that seen in scarlet fever. He was interested in the paper on this subject, because it had been his personal experience that the practitioners think of this cause of isolated joint affections last of all. A year ago he went on duty at the Presbyterian Hospital, and being a little more than generally interested in joints of this kind, he unearthed three gonorrheal joints that had been treated for rheumatism six weeks and eight weeks. They were taking ordinary rheumatic treatment, and passed as rebellious rheumatic joints. These joints were treated by immobilization and gradually recovered. At one time there was coincident occurrence of several gonorrheal joints at the Presbyterian Hospital. One of the first cases to attract attention was that of an old Irish woman who had an acute arthritis of the elbow. The speaker looked at it—at that time he did not know much about elbows of that style. Exquisitively sensitive—one could not touch the bed without her making some Hibernian remarks—swear profusely. She was very rebellious, and

would not submit to treatment of any kind. She wanted to go home—said she would not stay. The speaker had never seen anything more exquisitely sensitive. No fever—a fusiform swelling from wrist to shoulder. Beneath the elbow it was boggy, brawny, red. If touched it became white, and the blush returned slowly. Patient was not ill otherwise. One surgeon looked at it; he wished to open it for pus, but her Hibernian blasphemy broke loose; he left the ward and she went home. Dr. Northrup said he was very much interested in this elbow. Soon another case came in, quite like it, and it was pronounced gonorrheal joint. The speaker looked up the Hibernian woman of blasphemy and irritability. Told her he would like to help her—would put on a plaster splint—it could do no harm. She said she would have nothing of it; that she had seen a homeopathic physician who had lanced it. It would get well. Dr. Northrup saw nothing but a spot, a place where the doctor had pricked it and got a drop of fluid. The woman was no better. Finally she allowed the application of a plaster splint. That made two cases which began to get better immediately upon the application of the splint. Several similar cases followed, and among them a man came into a private ward with a similar affection of the knee. His urethral history was satisfactory; he had an old discharge which stopped before the swelling began. He wished to know how long he would be sick, whether he would get well and have a good knee. He must have an answer. He was told that he would be sick about six weeks; would have a perfectly good joint. He recovered in six weeks with a perfectly good joint. Another knee case came in just at this time; he was told the same story, and was also good enough to get well with a perfectly good knee-joint. He could take it in his hands and put it up to his chin. Then came a short series of cases similar to those described by Dr. Frauenthal in his paper—exquisite sensitiveness, fusiform swelling, apparently edematous, about the joint, with serous exudate in the joint. No destruction of tissue, no adhesions, perfectly good joints resulting. One was somewhat stiff, with little or no fever. They all ran this course, improving very much by immobilization in a plaster splint. Unless put up in plaster, these inflamed joints had not done well. That led the speaker to think every kind of rheumatic joint should be put in a bandage or something to immobilize it. Orthopedists may think it a primitive conclusion on the part of a medical man, but at present every kind of sore joint that comes under Dr. Northrup's care is put into plaster. Cases of rheumatism coming in fresh and sore are put up in guaiacol and glycerin, and improve, but the minute they are absolutely immobilized they do better. In the Willard Parker in scarlet fever cases it was interesting to note that most postscarlet fever joints were of the same nature, and recovered under the same immobilization, without destruction of tissue. In all discussions speaker's seem to be talking about different lesions; one speaks of a lesion with destruction of all tissues about the joint, recovering with permanent anchylosis, another of pus in the joints, etc. It did not seem to the speaker that this particular joint, periarticular cellulitis, had been very well described. In looking at the books he could not find one, at that time, which gave him a good picture of the eight or nine joints he had been seeing in those three months' service. Dr. Northrup thought the acute gonorrheal mono- or poly-arthritic joints deserved a favorable prognosis if properly treated.

Dr. L. E. Holt mentioned an epidemic of gonococcus infections at the Babies' Hospital in which 120 cases had occurred in a period extending over more than a year. In 17 children the joints were involved. All the cases were observed in infants and very young children. The joint inflammations as a rule were multiple, and involved most frequently wrists, ankles, knees and small joints of the fingers and toes. The process in the joints was a superficial one, and complete recovery of function occurred in a number of instances.

Dr. Gibney said the subject was very interesting, and he felt much indebted to Dr. Frauenthal for his paper and for calling attention to the acuteness of the pain. He also was indebted to Dr. Northrup for his remarks as to immobilization in joint disease. Orthopedists have so often been accused of too much immobilization and told that they have anchylophobia, that he was glad to have a man like Dr. Northrup say he immobilized every joint, even rheumatism; it was encouraging, and made one feel that he had not been working in vain.

As to the question of diagnosis, since the last case he had presented at the Section, which Dr. Frauenthal had suggested might be the effects of gonorrhea, he had been much interested. To-day he had a case of gonorrheal peri-arthritis of the spine, and eight years ago of the feet. He had not been quite so successful in his treatment of the joints in gonorrheal infection as Dr. Northrup, although he had used plaster-of-Paris, nor had he gone into it so thoroughly as Dr. Frauenthal in his cases. He could recall some of the most distressing cases in his practice—multiple arthritis with anchylosis, which never recovered. He did not know whether they were still going about. Sometimes one does make prompt recovery. If he could give his promise that they should recover in six weeks' time he would feel very happy.

Dr. B. Lapowski said he was very much interested in the remarks of Dr. Holt, and he regretted that they had not been made before the Academy instead of before the more limited Section. Dr. Lapowski suggested that Dr. Holt ascertain how the spreading of the disease in hospitals took place. Flies might have something to do with the spreading of the diseases, as Dr. Welander, in a similar epidemic, demonstrated that flies are carriers of gonococci. The next point is that it is not safe to rely upon microscopical examination alone, even if made by the best man. Gonococci, when injected into the muscle, produces an inflammation, edema, redness, but not pus, as shown by Wertheim, and the cases mentioned by Dr. Northrup can be brought into this category. It would be interesting to know whether the cervix uteri and other parts as urethra, rectum, were involved in the process. In women the vagina is not the usual localization of the gonococcus. It is doubtful whether even in children the vagina alone is affected.

Dr. Nathan said that he wished to fully substantiate what Dr. Lapowski had said. He had seen a great many of those gonorrheal joints, and would say that when they were purely gonorrheal they never suppurated, there was no destruction of tissue. Only where there was mixed infection and pus was there destruction of tissue. In regard to treatment of purely gonorrheal joints, without mixed infection, they would recover with rigid immobilization in a great many instances.

As to operating joints, no matter how careful the teachnic, all know that in some instances one gets infected joints after opening, and, as a consequence, stiff joints. With a mixed infection, where one is positive there is pus, the joints should be opened and drained. He had seen a number of cases of purely gonorrheal arthritis treated by general surgeons, in which the joints were opened and drained, resulting in complete anchy-

losis of the joints. To have opened these gonorrheal joints when there was no pus present was a grave error and a wrong to the patient.

Dr. Sayre said he had been very much interested in the discussion. He thought there was no question that the different joints described *were* different, and that one has a simple gonorrhea or a mixed infection with different results. In some of these joints there had been complete cure, although his cases had not been of the six weeks' kind more particularly spoken of by Dr. Northrup.

He had also seen the kind where there was great destruction of tissue of the joints. Dr. Sayre had seen several cases in the spine where there was anchylosis of almost the entire spine, and as he read accounts of those cases reported as spondylose rizomelique, the majority of them seemed to be gonorrheal arthritis affecting the spine. He had seen several such cases which were apparently classical spondylose rizomelique. The advantage of immobilization of any inflamed joint has not been appreciated by the profession at large as by orthopedists.

The speaker said he was very glad to hear Dr. Northrup say it is a good thing to keep inflamed joints still, as ophthalmologists consider it a good thing to keep inflamed eyes still, as orthopedists think it a good thing to keep any inflamed part of the body still. The reason a great many of these joints are a burden, a terrible cross, and last so long, with great destruction of tissue, is because they are allowed to wobble around; every treatment except rest being tried while the joint is progressively going from bad to worse. Some of these cases are extremely slow in recovering, in the experience of the speaker, certainly if not treated properly in the beginning. If they come to our notice after the patients have had them for a long time, the condition is invariably intractable. Many broken down feet, painful feet, tender feet of one kind or another, with not much apparently to account for the condition, have their origin in gonorrheal arthritis of the tarsal joints, and they are extremely intractable in the experience of the speaker.

Dr. Fiske said that in making a diagnosis of some of these cases one ought to bring to his aid every scientific means; still, a diagnosis of gonorrhea is often made without the microscopical slide in the same way that one is able to make a diagnosis of gonorrheal joint without making an aspiration of such joint. In every case the speaker made the statement to the patient that he might be well in three months—he thought that a reasonable statement to make. Most of these gonorrheal joints represent a self-limited disease; if the urethritis, the original focus be attended to, the joint will recover without treatment. Immobilization is a grand thing for these joints, or for any sensitive joint. Hot air—baking—is of great value. Some of the gonorrheal joints Dr. Fiske had seen had been cured in a remarkably short time, within two or three weeks, by baking. The joints are exposed to a temperature of 250° to 300° F. Dr. Fiske thought these joints should undergo this treatment. He still thought that if the original focus be attended to, the gonorrheal joint would go on to recovery; then it would be a self-limited disease.

Dr. Frauenthal said that the condition of the joint differs with differing contents, as explained by König's classification, and that is what makes the difference of opinion of various physicians as to the nature and prognosis of gonorrheal arthritis. Those containing plain serous effusions will as a rule recover in three, four or five weeks.

NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, held December 13, 1904.

The President, J. Riddle Goffe, M.D., in the Chair.

Double Fibromata of the Ovaries.—Dr. Bache McE. Emmet presented two solid tumors of the ovaries—one the size of a full-term fetal head, the other of a lemon, he had removed from a single woman, forty-four years of age, whose menses had ceased seven years previously. The appreciation of the presence of a tumor for two years, occasional pains, lately becoming almost continuous, and moderate emaciation were the chief symptoms for which she sought relief. The operation showed the larger tumor to be firmly adherent to the omentum, and to be twice twisted upon its pedicle. The smaller tumor was not adherent. The tumors are so markedly calcified that they had to be cut with a saw. A specimen removed for histological examination has been treated for two weeks with sulphuric acid to render it fit for microscopic section.

Dr. Clement Cleveland, in the discussion, asked if a microscopical examination had been made of these tumors, as several cases he thought to be fibroids proved by microscopical examination to be sarcomata. Most of his cases were accompanied by ascites, and he would also like to ask Dr. Emmet if ascites were present in his case. He had recently removed a small pedunculated fibroid of the uterus, the surface of which was calcareous, but its center was soft and necrotic. The menorrhagia, from which the patient suffered, was found to be due to a partially submucous tumor, so that he thought it is possibly wiser to advise laparotomy in a larger number of such cases than is the present custom.

Dr. J. Riddle Goffe asked if these are the ovaries themselves, or if they were simply attached to the ovaries as their seat of origin.

Dr. George E. Brewer (guest) asked if calcified fibromata of the ovary are common, as he had removed a tumor much like the one presented by Dr. Emmet from a woman seventy-three years of age, who had an acute intestinal obstruction from an incarceration of the tumor in the pelvis. A carcinoma of the sigmoid was was afterward found, which was removed by tying a ligature about the base of the sigmoid and severing. A colostomy was performed. Subsequent examination showed the ovarian tumor to be a sarcoma, which evidently occurred independently of the carcinoma of the sigmoid.

Dr. Edward Reynolds (guest) made a plea for a more exact pathological examination of apparently simple fibroids than has usually been made. He stated that for three years he had had every fibroid submitted to gross serial sections, and if any were at all suspicious they had been subjected to microscopical examination. He had discovered in this way that many cases of apparently benign tumors showed centers of sarcomatous degeneration, although experience had shown that one should not be too prompt in giving too much clinical significance to such pathological phenomena.

Dr. Emmet, in closing the discussion, said that calcified fibromata of the ovary are not common. There was no ascites in his case, although he thought the presence of the twists in the pedicle might itself cause fluid to be present. No ovarian structures were present other than the tumors. The presence of the calcification, he thought, pointed to a slow growth, and precluded the possibility of its being sarcoma. He referred to a fibro-sarcoma of the ovary that he had previously reported to this society, in which, from the solidity of

the tumor, it was first thought no sarcomatous tissue existed.

He also recalled a case which he first thought to be a uterine fibroma, but from its extensive connections and the presence of a rectal stricture, he finally concluded was malignant and did not attempt its removal. Subsequent observation showed this diagnosis to be correct.

Ventral Fixation and Labor; Laparotomy at Term to Free Adhesions.—Dr. R. L. Dickinson gave the history of a patient, thirty-four years of age, upon whom he had done a ventral suspension according to the method of Kelly, seventeen months previous to the beginning of her present pregnancy. A hematoma had formed in the abdominal wound but no suppuration occurred. During pregnancy the fundus remained close to the thin abdominal wall with only a little mobility. A dragging pain was noted toward the end of pregnancy when the uterus was found to be symmetrically enlarged and extremely tense with the abdominal scar depressed. The fetal head in the L.O.P. position was far above the inlet and below it, and behind the pubes was a soft mass that might be either fluid or the thick and vascular uterine wall. At 8½ months the smallest Voorhees bag was passed into the cervix, and the largest into the vagina, and left for eight hours. Moderate pains began and during the uterine relaxation between the pains a rigid band could be felt extending just above the abdominal scar. Only moderate uterine activity was induced, and the internal os was out of digital reach at about the level of the promontory. An examination under chloroform upon the fourth day confirmed the diagnosis of the false band, which was cut through an incision made above, and to the left of the old one. No real ligament was present, but an adhesion, one inch long by one half wide, dragged obliquely downward on the uterine peritoneal covering and upward upon the parietal layer. The omentum was lightly attached to it above. The uterine stump was covered with a Lembert suture. The abdominal wall was sutured in layers with catgut, reinforced by four figure-of-eight silkworm-gut sutures. Pains began spontaneously in five hours, and an easy labor occurred ten hours later. Of the three methods he has tried for these extreme cases of fixation—manual dilatation with forcible extraction, Cæsarean section, and freeing the adhesions, the last he considers infinitely preferable.

Dr. E. B. Cragin, in the discussion, said, we all admit that dystocia following ventrofixation occurs, but the treatment must depend upon the condition that is found in each case. In two cases that he had seen the entire anterior uterine wall was adherent to the abdominal wall and Cæsarean section had to be performed, but with such a condition as was present in Dr. Dickinson's case, he would do as he did. In both of his cases, too, suppuration had occurred in the wounds at the time the ventrofixations were done and was the cause of the extensive adhesions.

Dr. Henry N. Vineberg recalled a case he had previously reported to this society of adhesions between the uterus and abdominal wall following an operation for ectopic pregnancy. When first seen by him on the third day of labor, no advance had been made and the cervix was above the promontory and beyond digital touch. A thin membrane covering a defect in the abdominal wall where a drain had been passed was ruptured while preparing the abdomen for operation, and a small portion of omentum presented. The adhesions were broken up through this opening, after which an assistant pushed up the fundus and brought down the cervix, and delivery was accomplished naturally.

Dr. Clement Cleveland thought that the opportunity should not be lost by those who are opposed to either the operation of ventral fixation or suspension of pointing out that such a case as Dr. Dickinson has here reported offers a very potent argument against either of these operations.

Dr. Bache McE. Emmet would not absolutely do away with this operation, but in case future pregnancies were expected would never antevert the uterus and attach it to the anterior wall, and also would make a slight suspension but not abrading the peritoneal surfaces.

Dr. R. L. Dickinson, in conclusion, said these accidents are relatively rare, and the arguments are not sufficiently strong to make us abandon the operations. He referred to cases he has reported of patients going through the pregnancy smoothly.

Antepartum Measurement of the Fetal Head.—Dr. W. S. Stone made a preliminary report upon a method of measuring the fetal head with the ordinary pelvimeter. The two poles of the head—the occipital and the frontal—are first palpated in the ordinary way for determining the position. An assistant standing at the foot of the table, places the ends of the pelvimeter between the ends of the ring and middle fingers of the palpating hands, and presses them in as the one who is palpating directs, and reads off the measurement upon the scale. He has now collected 42 cases in which this method has been tried, and the measurements compared with the occipitofrontal measurements after delivery: 27 proved to be exactly right; 13 showed an error of .25 cm.; 2 showed an error of .50 cm. Further measurements are to be made, and a more detailed report of the cases will be published at another time.

Nephrectomy for Early Tuberculosis of Left Kidney and Stricture of the Intravesical Portion of the Corresponding Ureter.—Dr. H. N. Vineberg showed a kidney he had removed from a woman, thirty years of age, who began to complain last summer of lassitude and general malaise, with an evening temperature of about 100° F. Examination was negative except for a moderate prolapse of the right kidney and the presence of a trace of albumin in the urine. Treatment for a marked constipation seemed to promptly improve her condition, and an extended sojourn in the mountains caused an entire disappearance of the symptoms and a marked gain in weight. Two weeks after returning to the city the old symptoms reappeared, and the urine began to be turbid and contained pus. There was slight vesical tenesmus and the urine contained tubercle bacilli. The right kidney now seemed to be slightly enlarged and moderately tender on deep pressure. The lower pole of the left kidney could be barely felt on deep inspiration, but no tenderness could be elicited on the deepest pressure. Although a diagnosis of tuberculosis, probably of the right kidney was made, cystoscopic examination showed the right ureteral orifice to be normal and 15 c.c of urine collected from the right kidney was practically normal. The left ureteral orifice presented a nipple-like projection with a slit in the center. The trigonal area was considerably injected, and a few small tubercles were seen irregularly scattered in the interureteral space. The catheter passed into the left ureter was arrested about an inch from the bladder entrance. At a second examination the catheter was directed through the stricture, and the urine collected from the left kidney contained a large amount of pus and tubercle bacilli. The freezing-point was .89° C. The ureter was removed as far as the pelvic brim with the kidney, which shows an abscess the size of an English walnut, situated between the cortical and medullary portion, and at the junction of the

lower with the middle third. The abscess involved chiefly the posterior wall which was considerably thinned.

Nephro-ureterectomy for Tuberculous Disease with a Description of the New Technic for the Operation in Women.—Under this title, Dr. Edward Reynolds, of Boston, read the paper of the evening. He earnestly deprecated the indiscriminate application of nephrectomy to all cases of venal tuberculosis, and would only select cases for operation after careful study and usually after long preparatory and constitutional treatment. He divided the cases into two classes: (1) Those in which the course is rapid and the constitutional failure marked. As such cases usually have tuberculous foci outside of the urinary apparatus, he would treat them constitutionally and would only operate for the relief of otherwise irremediable suffering. While the chances of cure in this class by constitutional treatment are few, he noted such improvement in two cases that operations were refused. (2) Those in which the progress of the disease is slow, the constitutional condition is fairly good, and in which the tuberculosis is not only limited to the urinary tract but also can be demonstrated by cystoscopic examination to be limited to one kidney, its ureter and perhaps the bladder. In this class of cases he considers that a combination of constitutional and operative treatment a radical cure may be expected. The selection of the cases for operation should depend upon repeated examinations, and, if the bladder is diseased, by a preliminary local treatment before catheterization of the uterus is attempted. Of a large number of cases of renal tuberculosis he has operated upon eight. Two belong to the first class, and were distinctly improved for some time. Six belonged to the second class; nephrectomy upon two; one had a nephrectomy with subsequent ureterectomy; three had nephro-ureterectomy. One suffered from prolongation of symptoms due to a vesical cause, but at the end of four years was in an improved condition of health. Of the five others, four were in perfect health at periods ranging from eighteen months to seven years. One had a subsequent tuberculous abscess but is again convalescing. All of the eight made surprising gains in weight, color and strength during the first six months following the operations. After performing nine nephrectomies for tuberculous and other suppurative diseases, and seven complete nephro-ureterectomies, Dr. Reynolds is convinced that whenever a renal tuberculosis is held to indicate nephrectomy, the ureter should also be completely extirpated, because after the incomplete operations the symptoms persist longer, and in two of nine cases he had been obliged to subsequently perform ureterectomy. He thinks the superiority of the complete operation has been shown especially in tuberculous disease, in which the ureter is so often the seat of extensive disease.

Technic.—The chief features of Dr. Reynolds' technic are the doing away with the traditional nephrectomy pillow, and so placing the patient that through a moderate incision, about 3½ to 4½ inches long, extending from one-half inch auterior to the lower costal cartilages downward and outward to a point about an inch inside of the auterior superior spine, the entire operation can be performed under the eye by the aid of retractors, and the dilatation of the wound from the negative abdominal pressure. The patient is placed upon her side on a hard table with the legs extended nearly in line with the body, and is rolled as far backward as is possible without losing the negative abdominal pressure, which is shown by the appearance of a transverse concavity in the outline of the abdominal wall. A thin patient is best placed almost exactly on the side, while a stout one should be rolled farther backward, and may even need to have the hips raised by a cushion. The table may be advantageously tilted at its foot. After division of the muscles and fascia, a retractor in the upper angle of the wound enables the operator to recognize the perinephritic fascia and free the kidney, which, after removal of the contractor, is delivered, if the vessels are of the normal length. If not, it may be pressed posteriorly and elevated by the fingers of an assistant so that the vessels may be recognized. The kidney is then fastened to the edge of the incision in order to prevent any injurious dragging upon the ureter during the remainder of the operation. The ureter is freed by separating the peritoneum from the lateral abdominal wall until the pelvis is reached, when a Sims' speculum with a long and flat blade is introduced into the lower angle of the wound, and the ureter is freed under the eye to its insertion into the bladder. The stump is disinfected with 95 per cent. carbolic, and the entire wound is usually sutured without drainage. If the ureter is so diseased that it is broken during the operation, the wound is drained through the vagina.

Dr. F. Tilden Brown, in the discussion, stated that he had tried all of the various postures for nephrectomy, including the one described by the reader of the paper, except he had cushioned the sound iliocostal space, so as to render the kidney more acceptable, while Dr. Reynolds had omitted it in order to render the pelvic part of the ureter more accessible. Except in one instance, he had never done the complete nephro-ureterectomy, chiefly because in some of his early operations, in which extensively diseased ureters were left, the cases progressed so well as to suggest that such organs on becoming functionless were rendered more or less inert as foci of tuberculosis dissemination. A realization in later cases that surgical precepts should be better observed by a total removal of the ureter was offset by the possibility of extensive traumatism and protracted operation. Two cases, in which the ureter was severed seven and nine inches from the kidney, the dip at the sacral brim limiting easy accessibility, five years later presented no evidence of urinary tuberculosis, unless a suggestion of Addison's disease in one might be called such. In another instance, after nephrectomy the vesical symptoms persisted and a ureterectomy with partial cystectomy was contemplated, but a compromise suprapubic cystotomy to permit of curettage of the bladder and ureter by means of specially constructed curettes passed through the urethra, was followed by marked improvement so that now, two years afterward, no vesical symptoms exist. While his views differed from the essayist as to what constitutes a feasible limitation, he was wholly in accord with him regarding the advantages attending the removal of as much of a tuberculous ureter as is feasible. He could not agree, however, to the necessity of making this complete operation in all cases of renal tuberculosis. Such objection may be recognized in Dr. Vineberg's specimen of beginning disease and early diagnosis in which a part of one pyramid has a small necrotic lesion, although the small lesion noted at the vesical extremity of the ureter may or may not demand some later attention. His only nephro-ureterectomy was performed upon a man with bilateral renal tuberculosis after a lumbar transplantation of the right ureter had been made to relieve extreme suffering two months previously. Although the transplantation had relieved the vesical and ureteral pain, his condition was so

threatening that the kidney and ureter were removed. A surprisingly good convalescence occurred and he remained in fairly good health for two years while living on a farm, but after returning to work on a canal boat the other kidney became worse and he died after two months' stay in the hospital.

Dr. George E. Brewer believes these are cases in which the operation described by Dr. Reynolds is the rational one to perform, but does not agree with him entirely in his statement regarding operative interference in limited cases. He considers an ideal case for primary nephrectomy is such a one as has been presented here by Dr. Vineberg, in which an early diagnosis of an abscess can be made, before extensive infiltration has occurred through the pelvis or ureter. Tuberculosis of the intermediary portion of the ureter is seldom found, but the intravesical portion frequently becomes first involved so that in no operation can this portion be removed. In Dr. Reynolds' operation there is left a tuberculous stump. He also considers tuberculosis a disease that may be overcome by sufficient resistance of the individual after the primary focus has been removed as in tuberculosis of the kidney, testicle or joint. He referred to a plea of Dr. Willy Meyer before the New York Surgical Society for early diagnosis so that such principles may be carried out. A quick operation with less damage to the tissues, he considers, best carries out this principle, and in those cases which have an extensively diseased ureter, the complete operation should not be done with the idea of completely removing the disease. He stated his surprise that the reader of the paper could so readily reach the lower part of the ureter through his incision, because in his experience even in an incision extending along Poupart's ligament he had found it very difficult to follow the ureter, and in one case he found that a probe from the pelvic brim passed five inches before entering the bladder. Tuberculosis is nearly always a blood infection and tuberculous deposits reach the kidney through the blood in the majority of cases from the bronchial lymph nodes so that the kidney does not represent the primary lesion. He thinks in all of these cases cryoscopy is one of the most reliable means for making a precise diagnosis.

Dr. H. N. Vineberg, in closing, stated that his patient had been away to the country but had returned with evidently more disease of the kidney than before. He does not believe in treating the bladder before nephrectomy, and recalled a case in which he had done a nephrectomy after treatment of the bladder had been carried out at different hospitals for some time. Rapid disappearance of the symptoms and a marked gain in weight followed the operation. He agreed with Dr. Brewer of the uselessness of removing the ureter in cases similar to that which he presented to-night, because of the inability of removing the intravesical portion. He had reported six years ago a case of nephrectomy for early renal tuberculosis, in which a stricture of the ureter gave the first indications of the presence of the disease. Complete recovery followed. He believed, however, an attempt should be made to remove a ureter that is extensively thickened. He referred to Kümmel's series of seven cases in women, in which an early diagnosis was made without bladder or renal symptoms, except general malaise, pains and the passage of turbid urine, in which tubercle bacilli were found to be present. Each case presenting foci in other parts of the body must be judged by itself. Tuberculosis of the kidney is more frequent in women than in men and is limited to one kidney more frequently than is generally supposed. Bladder infections are secondary.

LAENNEC SOCIETY OF THE JOHNS HOPKINS HOSPITAL.

Stated Meeting held December 15, 1904.

SYMPOSIUM ON TUBERCULOSIS OF THE URINARY APPARATUS.

Pathology of Kidney Tuberculosis.—This phase was discussed by Dr. William Welch. There were, he said, two forms of kidney tuberculosis, the scattered miliary and the chronic localized types. The former was usually associated with general miliary tuberculosis, but it was noticeable that the kidney, though sometimes crowded with tubercles, usually contained fewer than other organs (particularly the liver and spleen), a fact found not only at the autopsy table but in experimental work as well. Perhaps the kidney is particularly resistant to this infection. Certainly miliary tuberculosis here is of no clinical importance for it produces no recognizable symptoms. The disease is probably perivascular though its embolic origin has been suggested.

Chronic Localized Renal Tuberculosis.—This was said to be the more interesting form clinically, much light having been shed on it by surgical advance. It may begin in the pyramids, sometimes at the papilla itself. An extensive caseous mass is then formed, there is marked tendency to cavity formation and nephrophthisis results. Sometimes only one pyramid is affected; but often more than one, and then the picture is that of a pyelonephrosis. The pyramids are destroyed but the columns of Bertin persist. The process extends as do similar cavities in the lungs. A caseous mass is formed. This is surrounded by a layer of granulation tissue, and outside of this is a fibrous layer containing many tubercles. Another type of the condition is, however (though less commonly), seen. Here several large caseous areas form and the whole organ becomes fibrous; but no real cavities appear. The disease may, though not commonly, begin at the cortex.

The Source of Renal Tuberculosis.—Dr. Welch said there was no doubt but that both ascending and hematogenous forms occur. Cohnheim was the first to show that not all renal tuberculosis was of the ascending type and to suggest the Ausscheidungstuberkulose. If, as stated by some, injection was always hematogenous, it was difficult to see why the disease was more frequent in males than in females—as autopsy statistics undoubtedly showed. The speaker's opinion was that infection took place by both routes—in females most frequently through the circulating blood.

Clinical Features of Renal Tuberculosis.—Dr. Futcher spoke of the varieties and symptoms of the disease, having drawn his facts largely from a complete monograph on the subject shortly to be published in the *Johns Hopkins Hospital Reports* by Dr. George Walker, who was unavoidably absent. Of 753 patients dead of tuberculosis in the Charité Hospital in Berlin, 25 per cent. showed renal infection. In 19 cases the bladder was involved and the prostate and testis in 13. Of 1,369 cases autopsied at the Johns Hopkins Hospital 784 showed tuberculosis. In 25 the kidneys were involved. Of 36 miliary cases all showed renal involvement. Primary tuberculosis of the kidney was not demonstrated in any case. Liver and spleen were involved about as frequently as the kidney. In the medical department of the hospital there had been 16,000 admissions. Of these 1,085 were tuberculous, the infection being renal in 17. Most of the cases occurred in the third decade. Tumor was palpated in 7 cases; pyuria present in 13; hemorrhage in 8; acid

urine in 15; and tubercle bacilli found in the urine in 9. The condition was secondary to tuberculosis of the lower genito-urinary tract in 9 cases.

Symptoms of Renal Tuberculosis.—The condition has often been latent and presents no additional symptoms when a part of acute miliary tuberculosis. Tilden Brown has reported cases without symptoms, but with bacilli in the urine. Polyuria has often been the earliest symptom. Its cause is not known. Frequent urination has usually been present early. With it there have been burning in urethra and bladder during or at the end of micturition. This is present without vesicle tuberculosis and may be due to the action of acid urine on a slightly inflamed trigone. Hematuria is always an early and may be the first symptom. The amount of blood is usually not large but the hemorrhage continues throughout the twenty-four hours—differing in this respect from calculous hematuria. Pyuria always appears sooner or later—the pus being abundant or only microscopical. Pain is common over the kidney. It is usually dull and radiates to groin, abdomen or scrotum. It may be paroxysmal (due probably to lodgment of a clot or a caseous mass in the ureter) and at this time the urine may be quite clear. Tumor is palpable in many of the cases, is usually tender and may either preserve the kidney outlines or be quite irregular. Walsham and others have found tubercle bacilli where no kidney infection was present, and this possibility must be borne in mind. The urine for microscopical examination should be collected by catheterization with careful technic as the tubercle and smegma bacilli are practically indistinguishable by ordinary stains. A portion of the second urine should be centrifuged and the smear stained by Grethe's method (carbol fuchsin, decolorization with 20 per cent. HNO_3, followed by absolute alcohol, counterstain with alcoholic solution of methylene blue) or by the method of Bunge and Trautenroth (absolute alcohol, chromic acid, carbol fuchsin, sulphuric acid, counterstain). Fever is a constant symptom. It is continuous, but irregular, and may rise quite high if the ureter be blocked. Sweats are frequent. Cystoscopic examination with ureter catheterization may be necessary to localize the disease. Injections of methylene blue and of phloridzin, together with cryoscopy, have been used to determine the condition of the unaffected side.

Operative Treatment of Renal Tuberculosis.—Dr. Kelly discussed the results of a series of 41 cases treated surgically by himself, Dr. Cullen and Dr. Hunner. In this series no case of ascending infection was noted, and it is probable that infection usually passes in the direction of secretion, going from kidney to bladder in the female and from epididymis to bladder in the male. Vesical tuberculosis without renal involvement occurred in only three cases of this series—being secondary to rectal involvement in one, and to hebal involvement in a second—the transmission being direct in these cases. In the third case no renal involvement could be proven though the patient always reacted violently to tuberculin. The route by which the bladder and then the oposite kidney are infected is not known. Probably it is the blood current, though disease of the urethral orifice may allow ascending infection from the bladder. Albert in 1890 pronounced nephrectomy for renal tuberculosis a flagrant error, but the disease is now undoubtedly curable. If allowed to go untreated there may be healing, or the enclosure of the kidney in a sclerotic sac or obliteration of the ureter. These processes will protect the general economy from involvement. Advance of the disease in the kidney, transmission down the ureter, secondary infections and tuberculous involvement of other organs are, however, the dangerous and frequent results of neglect. Surgical treatment may be conservatively done and cure has occasionally followed currettage. If the disease is sharply defined a wide excision might be possible; but as a matter of experience it is usually too extensive for this procedure. Nephrotomy is never a curative operation, but is admirably suited for patients too ill to undergo nephrectomy. The examination of urine for tubercle bacilli is a difficult matter. Catheterization does not necessarily avoid the entrance of smegma bacilli and guinea-pig injection may be necessary. A persistent acid pyuria without other organisms is always suggestive. Animal inoculation may be positive in cases with no kidney lesions, but the absence of urinary symptoms will make the diagnosis. The kidneys should always be palpated, but the possibility of a hypertrophied sound kidney should always be kept in mind if a tumor is felt. Palpation of the ureter per vaginam is most important. Cystoscopic examination of bladder and urethral orifices will often make the diagnosis. Tuberculous reaction is valuable when pain is localized in the affected kidney. Nephrectomy should be done through the kidney triangle, and when the capsule is thickened and adherent Olliei's intracapsular operation should be done. The next step in advance in this subject is earlier diagnosis. Localization of tuberculosis in the kidney is the most favorable one in the body; and vesical tuberculosis does not contra-indicate surgical treatment. Nitrous oxide is the anesthetic par excellence for these cases. Dr. Noble, of Philadelphia, said that his experience had convinced him that kidney tuberculosis was never the result of an ascending infection—first, because the disease was always more advanced in the kidney than in the bladder, and secondly because the bladder always healed after nephrectomy. Dr. Osler referred to the importance of early diagnosis and said that hematuria and pyuria should always suggest the possibility of tuberculosis. He congratulated Dr. Kelly on his brilliant results and spoke of three cases in the series known to him personally who are now in excellent health several years subsequent to operation.

JOHNS HOPKINS MEDICAL SOCIETY.

Regular Meeting, held December 19, 1904.

A Case of Aortic Embolism.—Dr. Osler showed the specimens from a patient who had died with this condition. Aortic embolism was, he said, an extremely rare occurrence, being only less rare than embolus of the heart. The patient was a girl of twelve years, with ulcerative endocarditis. She had been ill for six weeks with a high, irregular fever, but with no embolic features, and the diagnosis had been made on the heart signs. One week before death paralysis of the legs with sensory disturbances appeared. The limbs became cold but did not change in color nor did gangrene supervene. At the autopsy emboli were found in the aorta and in the spleen and kidneys.

A Case of Meningism.—This case was reported by Dr. Cole. A child, with a history of one week's illness (abdominal pain, fever and chill of onset) had become acutely delirious after admission to the hospital. The knee-jerks were increased and Kernig's sign present. Widal reaction was positive and *Bacillus typhosus* was cultivated from the blood. At autopsy lymphatism was extreme—thymus, general glands and Peyer's patches being much enlarged. Meningeal symptoms without lesions and

in the absence of organisms in the cerebrospinal fluid have been called "meningism." Dr. Osler referred to the possibility of occurrence of all the symptoms of cerebrospinal meningitis with simple acute congestion of the cerebrospinal centers.

Puerperal Gas Bacillus Infections.—Dr. H. M. Little reported 10 cases of infection with this organism occurring in obsetrical practice. The case of physometra reported by Dobbins in 1897 was the first of this kind to be accurately worked up. Several organisms had been reported as the cause of this condition, among them the vibrine septique of Pasteur, the *Bacillus phlegmoni emphysematosus* of Fankel and Ernst, the *Bacillus emphysematosus vaginæ*, etc. Uterine infections with the *Bacillus aerogenes capsulatus* might, according to Dr. Welch, occur as emphysema of the fetus, as puerperal emphysema, as endometritis or as gas sepsis—the last being probably often preceded by endometritis. The *Bacillus aerogenes capsulatus* does not normally occur in the vagina, and hence auto-infection is not possible. Of the ten cases reported by Dr. Little, in one the organism was isolated from a breast abscess following a saline infusion, and in the other nine from the uterus. Infection of the organs through a typhoid ulcer seemed probable in one case. The organism occurred alone in only two cases and its association with others made it apparently a more serious infection.

Arteriovenous Aneurism.—Dr. Osler reported a case who had developed this condition immediately after a pistol-shot wound of the thigh. The tumor, which reached from the ankle to thigh, was accompanied by a vibratory thrill and a continuous humming-top murmur accentuated at systole. Dr. MacCallum briefly reviewed the subject of arteriovenous aneurism. The classification of Orth was said to be the best, the condition being divided into (1) arteriovenous aneurisms (aneurisms which have later broken into a vein); (2) varix aneurismatica (varicose vein connecting with an artery), and (3) aneurisma varicosa (hematoma followed by later connection with the vessels). The cause is usually an injury, and particularly a stab or revolver wound. Complete rupture of the artery with simultaneous wound of the vein may take place and the condition prove fatal before a sac can form. Or bruising of the walls of artery and vein with later union may occur and few symptoms follow. Or there might be a small wound of each vessel with extravasation. Distention of veins and arteries, and chronic passive congestion result. Operative treatment has not proven satisfactory. Dr. Osler referred to a patient who had developed an axillary arteriovenous neurism, and is now, years later, living an active life. He had seen another case of arteriovenous aneurism involving the subclavian vessels. Dr. Bloodgood said that the treatment for these cases was suture, not ligation.

Ovariotomy at the Extremes of Life.—This subject was reviewed by Mr. Wiel. Dr. Kelly had, he said, removed the ovary in 115 patients over seventy years of age, and felt that the age of the patient was no contra-indication to the procedure. As to the character of ovarian tumors, dermoids were more frequent in children and rarer in the old, while the reverse was true of multilocular cysts. There were only three cases of carcinoma in the literature under ten years of age. The patient reported had come to the dispensary complaining of a vaginal discharge. The girl was five years old. The family and previous history were negative, except for a fall at one year. On examination there was an offensive discharge, the genitals were red and excoriated, the breasts somewhat large and a tumor was felt which under ether proved to be a movable, circumscribed tumor of the left ovary. At operation the other ovary was found normal and there were no glands. The tumor, which was removed, proved to be a cystic adenocarcinoma. Dr. Kelly said that too little emphasis had been laid on gynecology in children. They were, he said, particularly easy to examine and the vagina could be more satisfactorily explored by examination through a vesical speculum than with the finger.

Regular Meeting, held January 16, 1905.

A Case of Arteriovenous Aneurism.—Dr. Osler showed a patient exhibiting this condition. The patient, a male, now thirty-one years of age, had, in his eleventh year, received a knife-wound just above the right knee. This was soon followed by swelling of the calf of the leg, and a little later pulsation was noticed along the femoral artery with the development of a swelling in that region. The patient's health had remained good and he was exceptionally vigorous except for some disability in the right lower limb and for attacks of hemorrhage from varicose veins in the lower leg. Along the outer thigh, reaching from the lower ribs to the foot, ran huge, tortuous varicose veins, and the whole right leg was enlarged. Thrombi were palpable in the the veins, some of them organized and a few probably calcified. There was a pulsating swelling in Scarpa's space and along the femoral artery. Over this a thrill was felt—most intensely about the middle of the thigh. In the abdomen was another pulsating tumor, eight inches across and occupying most of the hypogastrium and right ilias fossa. The pulsation here too was expansible in character, and over it a thrill could be feebly felt. The abdominal tumor was thought by Dr. Osler to be a large venous sinus associated with the enormous venous dilatation above a traumatic arteriovenous aneurism. Its origin was, however, not perfectly clear and, so far as he knew, there were no other cases like this one in literature.

The Immunization of Mice to Cancer.—Dr. G. H. A. Clowes made a preliminary report of recent work on this subject done by him at the New York Cancer Laboratory in conjunction with Dr. Gaylord. The work started from the study of two mice infected with cancer brought to this country from Professor Jensen, of Copenhagen. These animals—which were suffering from subcutaneous carcinoma simplex—died before reaching Buffalo, but inoculations from their tumors, though unsuccessful in the first and second experimental series, finally "took" in a large percentage of the decsendants of these inoculated animals (hereditary predisposition?) and the investigators then had cancer experimentally produced on which to work. In the inoculations the tumor material was macerated in twice its weight of sodium chloride and injected subcutaneously. A tumor appeared locally (on the average in about 40 per cent. of selected cases), the animal became cachectic, the blood count fell and the growth became, in a few months, nearly as large as the experimental animal. During the course of the work the cancer material became attenuated and a certain number of animals with small tumors recovered spontaneously. It was from these recovered mice that immunizing serum was obtained for subsequent experimentation. A series of mice were inoculated with the cancer; half of this number then received a dose (2 c.c.)

of immunizing serum and the other half were kept as controls. This experiment was tried on animals with small, with medium and with large tumors. In almost every case the difference between the history of the immunized mice and the "controls" was quite marked. In the former small tumors disappeared in about five days, larger tumors diminished to half their original size; in the latter, the disease took its usual progress. All the control animals are now dead; all the immunized animals (with the exception of one dead from infection) are still alive. Later corroboratory experiments, while not quite so satisfactory as the earlier ones, gave in a general way always the same results. Tumors larger than a small cherry were never cured, but treatment reduced their size and rendered them more easily operable. Mice cured by serum immunization had sera capable of further curing, or at least counteracting, the disease. The sera of animals whose tumors had been improved by X-ray treatment were studied but they proved not to be protective. The protecting body of this immunizing serum was not a cytolysin, possessed no particular hemolytic activity and precipitive tests all gave negative results. Its protecting activity was not great and a large dose was necessary. The hope for the application of these results to human cancer lay, of course, in obtaining a case of spontaneously cured (or possibly even improving) cancer and then testing the serum of this patient for protective or curative powers.

Pathological Changes.—Dr. Welch discussed the microscopical features of the specimens showed by Dr. Clowes. The tumor produced in the mice was, he said, of the solid or simplex type, without acini and made up of polymorphous cells. The stroma was well developed and the connective tissue quite cellular. In the immunized animals the microscopical picture showed a striking change. In the larger tumors retrogressive metamorphosis was shown by necrosis of many cells at the center and by diminution in size of both protoplasm and nuclei of cells still preserved at the edge. In the smaller tumors it was almost impossible to tell that a carcinoma had ever been present, the picture being almost that of an inflammatory granulosa with multinuclear giant cells, necrotic center and vascular connective tissue shell. The observation of Drs. Clowes and Gaylord was, he said, a new and most important one. It offered at least a ray of hope for the treatment of human carcinoma; and while there was, as Dr. Clowes had said, a mathematical possibility that the results had been accidental, he felt this chance to be almost infinitesimal and the experiments practically conclusive within their own limits.

Apparatus for the Treatment of Fracture of the Femur.—This was described by Dr. Theodore Dunham, who devised it ten years ago and has been using it successfully ever since. It consisted of a plaster spica of the hip, connected with a plaster bandage of the lower leg by two long metal plates incorporated in the two plaster dressings and fastened together by seizing. In applying the apparatus the plaster bandages were first put in and the metal plates incorporated. Extension was then made in the required direction and the two metal plates lashed together. Coaptation splints might be added for older children, but were not indicated for young infants, in whom the thigh might be put up at right angles, giving the natural positon for nursing. The apparatus gave a constant extension, was simple and easily applied, did not necessitate keeping the patient in bed, did not interfere with the routine of life, allowed the thigh to be frequently examined without removing the dressing, and had given excellent results. It was necessary to reapply the seizing at intervals in order to take up slack and keep extension perfect. Size and muscularity made the treatment unsatisfactory in adults.

Treatment of Esophageal Stricture.—Dr. Dunham also demonstrated a method of treatment of "impassable" stricture. A silk thread was passed into an ordinary drinking tube and its loose end allowed to float in a glass of water. The water was then sucked from the glass by the patient through the tube and the silk thread was then washed down the esophagus. Its lower end could then be caught through a gastrostomy wound and the stricture sewed by the method of Abbé. If regurgitation occurred or the patient resisted with his tongue the thread could be passed through a rubber tube inserted into the nostril, and could then be washed down by pouring water into an attached funnel. The lower end of the thread could then be caught through a gastrostomy and the upper end fished out from the pharynx. An instrument for cutting strictures was also shown consisting of a guide bougie on which was locked an olivary-tipped dilator. Through the olive ran a cord the two ends of which were brought out through the patient's mouth. The filiform guided the dilator, the stricture being thus put on the stretch by the olive and sawed by the string. This allowed further dilatation and was followed by further sawing. A wire and spindle dilator was also shown provided with rubber protecting tubes for portions of the esophagus both above and below the stricture; and demonstrations of the use of the thread method were given on an apparatus constructed to represent esophageal stricture. Dr. Finney said that the great difficulty in these cases was in once getting something through, and that Dr. Dunham had made an important contribution to the solution of this problem. He himself had modified Abbé's method by simply tying knots in the cord, and after passing these through fastening larger and larger bits of gauze for the purpose of dilation.

Peripancreatic Abscess.—The case reported by Dr. Thayer was of a woman, aged fifty-one years, who had been taken in June with epigastric pain and jaundice. From this she recovered, but shortly afterward had an attack of very severe abdominal pain accompanied by jaundice, fever, nausea and vomiting. Fever was intermittent in character and there were night sweats. She complained of a "sore pain" in the left abdomen where there was a slight prominence, especialy above the iliac crest. A deep mass could be felt which did not reach to the perinephric region. Two weeks later, however, it had reached the hip and the kidney. Operation was performed by Dr. Finney, a peripancreatic abscess with fat necrosis being found and drained. Four similar cases had been seen at the Johns Hopkins Hospital characterized by abdominal pain (the onset being, in some cases, exceedingly severe), usually jaundice, fever, sweats, sometimes chills and, on palpation, a deep mass. This might be felt in the pancreas region, but in some cases extended much beyond it, even going well over to the right side. The clinical symptoms were fairly characteristic and the diagnoses could usually be made without urine and stool examinations, which, to be of value, would be quite complex chemical procedures. Possibly the test for a fat-splitting ferment in the urine might be used.

Surgical Treatment.—In peripancreatic abscess Dr. Finney said, the surgeon could either do nothing or accomplish much by doing little. Opening and drainage were the essential features. If the case was seen early it was better to do this in two stages, the tumor being isolated by gauze in the first and opened in the second after peritoneal adhesions had formed.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

Stated Meeting, held December 16, 1904.

Anchylostoma Duodenalis.—Dr. Smith showed a patient infected with this parasite. There was a history in youth of having suffered with ground itch, but otherwise the previous record was clear. Accidental discovery of an eosinophilia in a differential count made on his own blood (the patient was a medical student) led to an examination of the stools and anchylostoma eggs were found. Dr. Smith reviewed the morphological and cultural features of this parasite referring to the skin lesions (ground itch) caused by the entrance of the larvæ.

Primary Pernicious Anemia.—Dr. McCrae opened the symposium on this disease with a discussion of the clinical features. The symptoms were, he said, few and not characteristic. Weakness, dyspnea and pallor were the first to be mentioned. Then should come loss in weight—a feature seen in 50 per cent. of the cases in spite of the opposite statement of the text-books. Gastro-intestinal symptoms (dyspepsia, vomiting and diarrhea) were frequently seen. Hemorrhages also occurred. The nervous manifestations (numbness and tingling in the extremities, weakness of legs, "tabetic" gait) were not unusual and might be most confusing. Nothing in the symptom-complex was pathognomonic. As for the signs of the disease the color should be mentioned first. This might be a diffuse lemon yellow, a true jaundice, a local pigmentation or a pigmentation due to arsenic. In the mouth an infectious pyrrhea was sometimes seen—a feature greatly emphasized by William Hunter and his followers. Circulatory signs were not uncommon. The pulse was often rapid, moderate dilation occurred and hemic murmurs were common. In the stomach hydrochloric acid was often absent but lactic rarely present. The liver and spleen might be enlarged, ascites was sometimes seen and edema of the ankles occurred. Here again no feature was pathognomonic.

Diagnosis of Pernicious Anemia.—This of course could only be positively made from the blood examination and the most significant feature there was the color index. Confusion could arise from a group of diseases which ought to be distinguished from pernicious anemia and from another group impossible to differentiate. Under the first heading were included jaundice, cardiac disease, certain gastro-intestinal conditions, kidney disease and some nervous affections. The blood count would, of course, make the differentiation. Cancer of the stomach, certain other anemias, spastic paraplegia (in early cases) and tabes dorsalis (in late) might be impossible to tell from pernicious anemia. In cancer of the stomach the red count was rarely below 2,000,000, and in pernicious anemia rarely above it. A low hemoglobin was also found in the former condition.

The Blood Picture of Pernicious Anemia.—This, said Dr. Emerson, was really the whole disease. The features were a low count, a high color index, increase in the size of the reds, presence of nucleated reds in large number, evidence of blood destruction (poikilocytosis, blood pigments in the urine, jaundice, iron in blood and internal organs). The diagnosis might often be suspected from the fresh smear,—the size and dark color of the red cells, the variation in their size and shape and the lack of leucocytosis being noticeable. The average red count at the Johns Hopkins Hospital had been 1,500,000. The color index was over one in eighty per cent. of the cases. It must be remembered that hemoglobin estimations are only approximate and not so accurate as blood counts and too much stress must not be laid on the color index. The large red cells of pernicious anemia are not "dropsical" like the chlorotic cells. The cause of the dark color of the red cells is not clear. It is probably due to degeneration. The symptoms of the disease do not bear any relation to the blood count. At the Johns Hopkins the lowest count was 454,000. The leucocytes as a rule average under normal and there is a relative, but not an absolute, lymphocytosis—due really to changes in the granular cells. Megaloblasts (red cells with nuclei at least as large as normal erythrocytes) are found in fifty per cent. of the cases at a low estimate. Blood crises,—when a large number of nucleated reds suddenly appear in the blood,—were once thought to signify regeneration and to be always followed by a rise in the count; but the attempt at regeneration is often abortive. High color index, poikilocytosis and megaloblasts are occasionally seen in other conditions but are fairly characteristic of this disease.

Pathology of Pernicious Anemia.—Dr. C. H. Bunting reviewed this phase of the subject. The disease was said to be a general one (except for an apparent immunity in Prague and Munich), to affect all races, to occur most often in middle life and among robust people. Addiston regarded the disease as a general anemia without discoverable cause; Biermer defined it as a progressive anemia due to diseases associated with hemorrhage, to long diarrhea, to unhygienic conditions and occasionally to unknown cause. It is not yet certain whether pernicious anemia is a pathological entity or a symptom-complex associated with many conditions. Iron deposit in the viscera, yellow fat, unusually red muscles, and charged bone marrow are among the pathological features. Atrophy of the stomach, cord degenerations and infections of the gastro-intestinal tract are also seen. The cause of the disease has been the subject of much dispute. Cohnheim thought there was a reversion of the bone-marrow to the embryonic type. Possibly the process consists in absorption of toxins from the intestine, hemolysis and resulting poor function by the bone-marrow. In certain rabbit experiments, made by Dr. Bunting, hemolysis was produced by the injection of ricin which seemed to bear out this explanation.

Treatment of Pernicious Anemia.—Dr. Brown said that this varied somewhat with the physician's theory of the cause of the disease—mouth antisepsis being emphasized by some, administration of bone-marrow by others. Transfusions of defibrinated blood should probably be reserved for extreme cases. Arsenic, given as Fowler's solution, as cacodylate of sodium or as atoxyl, was the drug par excellence. Improvement with it might be striking. The combination of other drugs usually availed little. Absolute rest, fresh air, a moderate climate (possibly a slight altitude) and great care as to the diet were essential features in the treatment.

Stated Meeting, held January 3, 1905.

Pathology of Nephritis.—Dr. MacCallum, in opening a symposium on this subject, referred to the unsatisfactory nature of all classifications. The most classical and fundamental paper since the one of Bright had been Weigert's. The disease is a diffuse and not a local one and degeneration rather than

inflammation is the essential point. It is due to toxins (probably not usually bacterial), to poisons (alcohols, etc), to intestinal absorption, to constitutional diseases (gout, lues, etc.) and follows the acute exanthemata and pregnancy. Variations in the intensity of the toxins explains variations in symptoms, course and pathology. All the tissues of the kidney are affected simultaneously in the disease, the degenerative change being the first. Then follows a reaction, inflammatory in character. Attempts at regeneration occur and there is healing with a scar-formation and shrinkage. The interstitial is therefore a secondary form, and the various clinical varieties should be thought of as transitions in a large series.

Acute Nephritis.—Here the kidney is swollen, the capsule fairly normal, the glomeruli prominent and cortical striations opaque. There is epithelial degeneration, exudate in the tubules, and inflammatory reaction in the glomeruli.

Chronic Nephritis.—No really definite types can here be separated, the various forms grading into one another. Epithelial degeneration is extensive, there is marked infiltration with wandering cells and there is local scarring. The capsule adheres, and under it are wedge-shaped areas of atrophy separating areas of hypertrophy and active function. This is the typical picture; other forms differ only in the relative amount of degeneration and scarring.

The Symptoms.—In the acute form, said Dr. Futcher, the onset was abrupt, and there were fever, headache, pain in back, nausea and vomiting, and prompt edema. The chronic might often follow, being characterized by pallor, a pasty putty face, chronic persitent anasarca, high blood-pressure and the well-known vascular and urinary changes. Many of the interstitial cases were unsuspected and came to the physician first with severe symptoms. Headache, vertigo, pallor, nausea, vomiting and high blood-pressure taken with the urinary changes made the diagnosis. The symptoms might be grouped as the cardiovascular, the uremic, the respiratory, the sensory and the urinary. A continued unexplained diarrhea should always make one suspicious of nephritis.

Urinary Changes.—These were described by Dr. Whitney. Nephritis, and not mere albuminuria, being taken as the subject. In the interstitial form the quantity, nearly normal at first, becomes larger and subsequently smaller. In the parenchymatous variety the amount is reduced. Albumin is in a rough way inversely proportional in amount to the amount of urine. A decrease of albumin with an increase of urine is approximately a good prognostic sign, but only approximately. It is probable that there is no marked retention of urea over a long period of time and urea determinations have a very limited value. So, too, of the various methods of functional diagnosis.

The Eye Changes.—The most important early changes were said to be subconjunctival hemorrhages and arteriosclerosis of the retina (the so-called Marcus Gunn vessels).

BOOKS RECEIVED.

VITAL STATISTICS OF THE CITY OF CHICAGO, 1899 to 1903, inclusive. Chicago, 1904.

ESSENTIALS OF ANATOMY. By Dr. C. B. Nancrede. 12mo, 419 pages. Illustrated. W. B. Saunders & Co., New York, Philadelphia and London.

BOOK REVIEWS.

BACTERIOLOGY AND THE PUBLIC HEALTH. By GEORGE NEWMAN, M.D., F.R.S.E., D.P.H., Metropolitan Officer of Health of the Metropolitan Borough of Finsbury. Third Edition. P. Blakiston's Son & Company, Philadelphia.

THIS is essentially a popular treatise. Not of that type commonly so designated by many writers in this part of the world—and which may be translated into the general word "rubbish," but a popular work of a high order, written by a man of the highest repute and with a large experience as a health officer.

Looking through the pages of this work the reviewer is tempted to ask—How long, O Lord, how long—shall the sanitation of our large municipalities be delivered up into the hands of the spoilsman and fowler. When, throughout the land are we to have men of this type of qualification at the head of our sanitary affairs—not sporadically as we do have, and a few in a decade, but everywhere and at all times.

The problem of public health is one of the most important in the domain of the physician. It should not be soiled by the dirty hands of the political contractor. We commend to our health officers and students of public sanitation this excellent volume.

The mechanical get-up of this work is everything to be desired.

TEN LECTURES ON BIOCHEMISTRY OF MUSCLE AND NERVE. By W. D. HALLIBURTON, M.D., F.R.S., Professor of Physiology, Kings College, London. P. Blakiston's Son & Co., Philadelphia.

DR. C. A. HERTER, of New York, in accepting the chair of Pharmacology at Columbia University, founded at the University and Bellevue Medical College a Herter Lectureship on questions concerned with clinical physiology or chemical pathology. Dr. Halliburton was the first to give these lectures, and the present volume represents the substance of the lectures in an elaborate manner.

The series are of intense theoretical as well as of practical interest. They review practically all that is known of the intricate changes that go on in these structures under the many diverse conditions of both normal and abnormal functioning. We cannot hope to pass in review the results here set forth. We can only commend them as readable and profitable to student and practitioner alike.

A TEXT-BOOK OF HISTOLOGY. By FREDERICK R. BAILEY, A.M., M.D., Adjunct Professor of Normal Histology, College of Physicians and Surgeons, Medical Department Columbia University, New York. William Wood & Company, New York.

THIS is essentially a student's book—and a very excellent one. From first to last it is evident that the author has in mind the needs of the student in the classroom, and has given him a descriptive manual of high excellence.

In general the treatment of the subject is straightforward and direct. Controversial matters are omitted, and abundant illustration makes the text very simple and effective.

We feel that the chapters on the blood might have been more fully treated and better illustrated, but this is the only subject that does not seem to have received a full share of attention. The mechanical work on the book is excellent.